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MAN AND HIS INSTITUTIONS

BY

N. A. RICHARDSON

Author of "Introduction to Socialism"
"Industrial Problems," Etc.

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PREFACE

In this work an attempt is made to give the reader at least the gist of some ideas that have been gleaned from years of reading and thought. They are ideas that have made a deep impression upon the author's life and have richly rewarded the labor of their accumulation.

The difficulty in composing such a work as this lies in the necessity for brevity and conciseness. It is the common man that I would reach with the message herein contained and this cannot be done with voluminous works. To reach him, the story must be short and clear, and told in language that he can comprehend. The language of science is to him in a great measure, a foreign tongue. To grasp anything of the mighty consequences of scientific investigation, experimentation and discovery, it must be brought within range of his comprehension. A crying necessity of today is a popularization of great thought. The narrow circle of intellectuals and specialists in all lines is abundantly supplied with material for its delectation; the mental food for the masses, that is worth the effort of digestion, is all too scarce.

Our common man has a right to this knowledge. It has intrinsic worth though its presentation is not fully up to the ultra-scientific standard. A small volume may stimulate him to a wider and deeper range of reading and thinking. It will at least awaken him to something of the trend of the world's higher concept of things in which his interest should be quickened. It is "a little learning," but endangers only the success of the usurper, oppressor or tyrant.

I have not burdened this book with citations and il-

illustrations from authorities. Brevity forbids it. To those who desire voluminous evidence on the matter treated, I would say, go to standard works on logic, astronomy, history and science generally. Read at least a few such works as Morgan's "Ancient Society," Ward's "Ancient Lowly," Spencer's "Principles of Sociology," especially his "Data of Sociology," Darwin's "Origin of Species," Huxley's "Man's Place in Nature," "Haeckel's "Riddle of the Universe," Ward's "Social Dynamics," Draper's "Intellectual Development of Europe," Lecky's "Rationalism in Europe," Buckle's "History of English Civilization," Clark's "Ten Great Religions," Dr. Andrew Dickson White's "A History of the Warfare of Science With Theology in Christendom," Le Conte's or Dana's "Geology," Marx' "Capital," or many other such standards as might be named. The public libraries and your encyclopedias are replete with evidence upon all phases of the matter herein discussed or suggested—voluminous works that contain the thought of the world's greatest minds and greatest workers—voluminous works that too commonly rust from neglect and upon which the dust of disuse is regrettably conspicuous.

THE AUTHOR.

San Bernardino, California.

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MAN AND HIS INSTITUTIONS

PART I.

EVOLUTION

I.

INTERPRETING NATURE

The last century has witnessed radical departures from the hitherto accepted ideas of the civilized peoples of the world in regard to many things; but from no other of the old standards has that departure been so great or so significant as in that of our conception of man's place in nature.

This modification—this revolution—in our knowledge of the genus homo has resulted from our study of man as we study any other animal or thing. In other words, we have made application of scientific methods in solving the processes of our origin and development. We have substituted the results of intelligent observation and experiment for classical mythology.

During this century there has been written much of the actual history of man. This has largely supplanted the annals of courts, the flattering, fictitious biography of kings and nobility, the disgusting details of human butcheries, and the deification of military heroes. The vain conceits in which man has ever clothed himself with superior and even supernatural origin have been discarded

and he has been studied in his past and present as he was and is, like all other things, a product of nature.

It is in the light of modern thought alone that man can be intelligently viewed. To comprehend this creature, we must go to his beginnings. We must study him in his lowest status, in an environment that was wholly natural. We must follow his story through all the stages of his development. We must study the ever swelling number and increasingly complex character of his discoveries, his inventions and his institutions. The modifications in his surroundings whether they be artificial—due to his genius as an inventor or as an organizer; or natural—resulting from migrations, changes in the earth's topography or climate or in both—must be thoughtfully traced and the effect of these modifications upon his physical and mental upbuilding as carefully noted.

It is by such a study alone that one acquires a due appreciation of what our race has accomplished. The knowledge thus gained forms the only reliable basis from which to sense its potentialities—its possibilities of future attainment. And, likewise, it is this sort of discipline that qualifies one to understand the shortcomings of his fellows—the thoughtlessness, indifference, impossibility of appreciation of the higher thought, frivolity, superstition, or downright stupidity that characterizes so vast a majority of mankind.

Man's superior attainments are due primarily to the development of a power to reason far beyond that possessed by any other animal—to a capacity to discern more fully the relation of cause and effect, to adapt more thoroughly means to ends. His institutions of whatever nature are but instruments for this adaptation. The ends to be attained have been various, such as improved meth-

ods of procuring food, clothing or shelter, defense against or attack upon enemies, and a knowledge of the nature and cause of what transpired around him—the relation of phenomena. These have constantly kept open ample fields for his activity both physical and mental; and his advancement has been the measure of those activities. His energies have been largely spent in ascertaining (or theorizing about) the how and the why of things. His necessities and ambitions have made him a constant solver of, or speculator about problems, a seeker after the cause of phenomena, a formulator of the laws of relations.

To the superficial observer, the most astonishing fact in the history of our species is that, through hundreds of thousands of years of its existence, practically all the formulas deduced, all the causes assigned—all the “laws of relations” laid down—were untrue. Outside the purely deductive science of mathematics, man has certainly “believed everything except the truth.”

It requires but meager insight into the number, the nature, the intricacy and the profundity of the problems that confronted primitive man and his descendants to excite the profoundest sympathy for them in their wanderings from the line of right thinking. In order to understand more clearly why they so constantly erred, it is all-essential that we review somewhat the method or methods of solution that must be followed—and that they did not follow. Such a review must necessarily be brief in a work like this, but brief as it is, it is vital to the work in hand.

There are two modes of reasoning and all logical conclusions must be reached, all problems must be solved, through one or the other process. They are known as the **deductive** method and the **inductive** method. An un-

derstanding of the meaning of these terms is a fundamental requirement.

In the first, or deductive process of reasoning, we proceed from universal truths or "general laws" to individual or special cases. For instance: The whole is greater than any of its parts; the sum of all the parts is equal to the whole; if equals are multiplied by equals, the resulting products are equal; if two things are each equal to a third thing, they are equal to each other. These are some of the axioms upon which the entire science of mathematics is based. They are self-evident truths, and the person who cannot comprehend them is *non compos mentis*—of unsound mind. We cannot conceive of a condition in which these relations would not be as they are with us. They are universal truths or general laws.

From these truths, first the simpler relations are discerned. From these same truths and the simpler relations, the more complex are revealed. And thus we proceed throughout all mathematical computations or demonstrations. Since the solution of each succeeding problem or theorem is but an extension of the application of these truths, the conclusion drawn from each solution is just as true as the axioms themselves. A mathematical process, therefore, cannot give a wrong result.

In the inductive process of reasoning, the conditions are the reverse of those we have been considering. Here we must observe special cases, and out of the phenomena that we can discern in those cases, we must discover a general law or universal truth. For example: There are a certain known number of planets in our solar system. They all go around the sun from west to east. Each one presents a special case. From these special cases we lay down the general law that all planets of our system, un

known as well as known, go around the sun from west to east.

It is evident that we are not so secure in our conclusion in this instance as we are in one drawn from mathematical methods. There is a possibility that a planet may be discovered moving in a contrary direction; but there is no possibility of discovering that any of our mathematical axioms are subject to variation.

Again, from what we know of our own solar system and from what we can observe in a few cases among the stars, we lay it down as a general law that every star is a sun and the planets of each, whether they be many or few, all go round the central body as do ours, not only in the same direction, but in the same plane. From these special cases, we have formulated a law of the universe.

The probability of erroneous conclusion resulting from such a method of reasoning is at once apparent; and many indeed are the laws that have been thus formulated (though by no means upon so sure foundation) that by subsequent observation and experiment were disproved. In fact, the ancient theories (and many not so ancient) have all been relegated to the waste baskets of the modern laboratories. The reason for this will become evident as we proceed with our discussion.

It is also apparent that the expression of truth in general laws from special cases is a much more formidable task than that of solving problems from universal truths that are axiomatic, or that from any process have been previously demonstrated. The relative difficulties encountered are well illustrated in the following adoption from Stanley Jevons "Lessons in Logic":

Student "A" who does not know German is presented a dictionary, a grammar and a rhetoric of that language,

with translations that render them comprehensible, and is required to compose a treatise in the foreign tongue. The dictionary contains ready made all the words and all the laws of spelling; the grammar all the laws of relations, uses, inflections, etc., of the words; the rhetoric, all the laws of construction that must be observed in order to endow each sentence, paragraph and chapter with rhetorical qualities. With these general laws in hand, the student has but to apply them in a vast number of special cases—to words, sentences, paragraphs and theme—and the treatise is deduced. “A difficult task,” you say. Yes, but it must be observed that “difficulty” is a relative term. The task appears insignificant by comparison with that that is assigned to student “B.”

This composition—this mass of special cases in the forms, uses and combinations of words, phrases and sentences—is, without translation, placed before student “B” who knows not even the German alphabet. To him is assigned the task of formulating from these special cases all the general laws—he must construct the dictionary, the grammar and the rhetoric.

“Impossible,” you say, “it could not be done.” But the fact is it could be done. In the case of the Persian language, it has literally been accomplished; and with but a very brief composition of which a translation was found in a known language as a key, that stupendous task has been thoroughly worked out in three other cases—the Egyptian, the Median and the Assyrian.*

Nor, when we consider the trained skill of those who worked upon it, are the difficulties of such a task in any sense comparable to those that were set before our prim-

*See the history of the Rosetta stone and the celebrated inscription of Darius Hystaspes.

itive ancestors. Those ancestors were of undeveloped brain and wholly untrained in modes of thought. They were engulfed in an infinity of phenomena and without the slightest conception of the cause of any of them, or, in but rare and simple exceptions, of the relation of one to the other. They could connect the throwing of a stone or the shooting of an arrow with the effect thus produced upon an enemy or some hunted animal. After many ages of experience with nature, they learned how to boil water and that water in that condition would cook meat or fish; but they had no conception of why water would run **down** hill and not **up** or of why it should move in either direction. The thousands of manifestations of what we know as the force of gravity; the air, the thunder, the clouds, the lightning, the rain; the ocean billows, the breeze, the hurricane; the existence and the diversity of plant and animal life; the forest moan and the ghostly echo; the intermission of day and night; the changing seasons and all their concomitants; the vast celestial dome that rested on mountain or plain; the wandering sun, moon and planets and the somewhat more constant stars that by day or night traversed the sky, hid behind hill or bathed in sea; the awful eclipse and the terrifying comet—these and a thousand other things stood out in as bold relief and concealed more hidden mystery than did ever the hieroglyphics of the Egyptian or the cuneiform scrawls on an Assyrian tablet.

It took many ages for primitive man to develop to the point of attempt to assign any sort of cause for phenomena—to treat them as in any manner related to anything, much less to each other. Later he very naturally assigned them all to the supernatural. The mental process necessary to discern a series of incidents so related as to sug-

gest a general law governing them—to reason inductively—is far beyond the savage. He treats phenomena singly and avers their control to the spirits of his ancestors. When he has attained a higher mental status, supervision of occurrences is passed up to the gods into which the former ancestral spirits have been translated. But we must leave this subject to be resumed in its proper sequence.

Even when man has attained a high culture, when he has wrought a civilization that has profoundly affected all future civilizations; when through the purely deductive process of reasoning, he has mastered the subtilities of geometry and perfected a science of logic, he fails pitifully in efforts at induction. His “general truths or laws” are at wide variance from the truth. This because he attempts to arrive at them by “process of pure reasoning”—deductively—or from special cases of phenomena that he is not qualified to interpret. For instance, historically speaking, until quite recently it was given as a general law that **a body falls because it has weight**. From this it was inferred that the more weight a body possessed, the more it must fall. Therefore, a body weighing ten pounds will fall twice as far in the same time as a like body weighing five pounds.

Here is a syllogism that stood the test of the world’s scholarship for many centuries. “Pure reasoning” could assign no other cause for a body’s falling. Hence, the law must be true. Five minutes of intelligent experimentation would have disproved it. But the wisdom of Greece and the ages that followed had proclaimed it true. It was seasoned by age and sanctioned by orthodoxy. And so when, about 1600, Galileo, in the presence of a large assemblage of scholars, dropped some bodies from the top

of the leaning tower of Pisa, shattering this authoritative tenet, he was at once proclaimed a heretic and a witch. If the word had been current at that time, he would doubtless have been called an anarchist. Had not his persecutors been more merciful than some of their descendants, he would have met the fate of Ferrer.

We must recall that, prior to this time, men had no true knowledge of the laws of motion. Again, they very naturally assumed that a body's weight is a fixed quality of that body—that a body of certain weight at a given point would possess the same weight anywhere in the universe. Whereas we now know that the weight of a body varies at different points on the earth's surface; and at a point four thousand miles above the surface, three-fourths of this "fixed and universal quality" would disappear. Weight is wholly dependent upon conditions of which they were ignorant. They, consequently, could not interpret the phenomenon nor that of a falling body; therefore, the law governing these things was beyond their ken.

The people of old observed that a liquid would rise in a tube from which the air is partially or wholly exhausted. They could suck cider through a straw, or pump water from a well. Their explanation—the general law made manifest from these special cases—was the dogma "nature abhors a vacuum." The fact is, nature (meaning the universe) is more nearly a vacuum than anything that man can contrive.*

*If we represent our solar system on a scale of 100,000,000 miles to the foot, the entire system falls within a radius of 30 feet. The sun and all the planets combined would be a ball of matter about one-eighth of an inch in diameter and about the mass of a drop of water. On the same scale, the nearest star is at least 50 miles distant. Therefore, the part of the universe

In this, as in the former instance, the truth of the matter, the law governing the phenomena, must be learned from "special cases" of which the world was for some time to remain ignorant and that escaped the trained and vigilant eyes of Galileo himself. From experiment it must be learned that the air has weight; that in consequence of that weight, it exerts pressure at a given point varying according to the depth and specific gravity of the air over that point; and when that pressure is wholly or partially lifted from the surface of the liquid within a tube, the pressure of air on the surface outside the tube forces the liquid into the partial vacuum. And more, vastly more, Copernicus, Kepler and Newton must each contribute his mighty quota to science, the law of gravitation itself has first to be a part of human knowledge, before this seemingly simple occurrence can be understood. And today, despite our attempted pretentious popularization of science, there are but a relatively few among the most enlightened people of the most enlightened nations who comprehend it.

Nor is this phenomenon of rising liquid into a total or partial vacuum an exception as an index of the ignorance of the masses of people concerning common occurrences. Relatively few indeed, even among those who are commonly included in the term "educated people," really comprehend the cause of—the general laws exemplified in—such apparently simple phenomena as wind or rain. Nor can we exempt from among these uninformed "educated people" an astonishingly large per cent of those

that we "occupy" contains, on an average, the quantity of matter represented by one drop of water for each cube of 100 miles dimension, or a drop of water to each 1,000,000 cubic miles of space.

who do the teaching in our various educational institutions. Under stress of necessity, these teachers learn to repeat glibly sets of formulae, or rules, or sentences; but when subjected to crucial test, are deficient in actual comprehension. The uneducated—and by that is not meant simply the illiterate—have no mental grasp of the cause of any phenomenon. Nor can an explanation be given that the unschooled can follow. This because the phenomena of nature are so intricately related that an attempt to isolate one of them and reveal its full meaning to one in whose mind a proper foundation has not been laid, is like an attempt to fathom a volume from the reading of some brief sentence.

When such conditions obtain in this day of machinery, of laboratories, of free schools and compulsory educational legislation, of our boasted knowledge, and the myriad of institutions that characterize our civilization, what is there to excite in us any mental attitude except sympathy for our progenitors as they groped their way toward the light, fettered by the inexperience, conservatism, superstition and the consequent intolerance of the long past? They were savages and barbarians, and it will later be shown that our own shortcomings are due to the fact that we are as yet so little removed from them.

In the minor phenomena of nature, such as those already considered, in laboratory or experimental processes—in the inductive method of ascertaining truth—they manifested little or no interest. With characteristic consistency, they passed unheeded the small, fundamental, basic problems, but proceeded off-hand to solve the mightier mysteries. These they reduced to the simplest formulae, telling in few words of the manner and the succession in the formation of earth, darkness and light, the appear

ance of animal and plant life including man himself and of the starry heavens, not omitting even such details as the days involved.

Finally, let us note a special instance. In one of Defoe's works he tells us with childlike simplicity that a comet came and stood over London. This terrifying event was soon followed by the great plague. The interdependence of the two events was a very natural inference on the part of those who knew nothing of the nature or cause of either. But that is not what here interests us. He says that it came and stood over London. Many intelligent people had told him so. He saw it himself, but was rather young to retain the memory. But they had seen it night after night standing over the city. They thought that it was a few miles up in the air and knew that it had come to herald disaster; and when, the next year, the disaster came, they were doubly sure of its portentous significance. **Post hoc; ergo, propter hoc.** (After this; therefore, in consequence of this)—the trite old way of linking assumed cause and effect.

Astronomers now know that that comet was millions of miles from earth and moving at a rate that would carry it past the London of that day in a fraction of a second. Yet thousands of Londoners saw it standing over the city. Why? In the first place, they knew of no reason why the thing should come at all except that it be sent by supernatural power on a special mission. In which case, it would be even more likely to stand at least during a part of the performance of that mission than to constantly move. With them the element of possibility in its behavior was eliminated; probability was all that merited consideration. Secondly, it was so far from the earth that its apparent motion was very slow—too slow

to be readily detected by such observers. Thirdly, in their ignorance, they were terrorized by the appearance of such an apparition and disqualified to pass judgment upon anything concerning it.

In this story we have one of a chain of instances that make up a very large part of the annals of our race; and each instance, like this one, is but a relation of the evidence of incompetent witnesses of phenomena. Nothing is more essential in the search for truth in the records of the past—in the application of the historic method—than a due regard for the competency of witnesses. The claim of a few or of many people that they “saw” an occurrence, and even their ability to relate of it in detail, is little evidence that it took place as related or even that it happened at all. The nature of the assumed or real occurrence; the qualification of the witnesses to interpret the phenomenon in question as well as the necessarily related phenomena; the mental attitude—a consequence of previous mental training—of the onlookers regarding such occurrences generally; and last and chiefest, the possibility of such a phenomenon within the range of natural law—these considerations are the least that must enter into the determination of the competency of evidence regardless of when, where, or by whom that evidence is presented. How readily such a test eliminates the various elements of our comet story—the standing over London, its causing the great plague, its heralding coming disaster, its presaging the wrath of a Creator over the shortcomings—the failures—among His creations.

It is refreshing here to relate that through this night of ignorance and superstition there shone a few bright stars. One of these souls possessed at least in some degree of the spirit of a heretic, while his countrymen cowed in fear and

cried to their gods to remove this terror, was carefully measuring its movements, ascertaining the elements of its orbit, and thus riveting another link in the chain of evidence of the great law of gravitation.*

These illustrations may serve to suggest something of the proportions of the task that man had to meet. Phenomena of whatever nature—and phenomena encompass all things apprehended by observation—are but consequences of the operation of natural laws. To find these laws, to ascertain these truths, has been the work of the scientists; and the end is not yet. Until very recently, the merely speculative, the metaphysical, the mythological, the theocratic dominated the methods of so-called research. Such mode of procedure resulted in mere dogmatic utterances that were at one extreme harmless and meaningless, and at the other, so infectious and devilish that they required the “authority” of all the organized powers within a state to compel their acceptance. As the recent centuries waned, so did the old methods. The searchers after truth began to go to nature itself to learn the laws of phenomena. They left the library and the cloister for the open field and the laboratory. They duplicated phenomena—special cases—in conditions easily understood; and from these the true relations, the general laws, were learned and formulated. The inductive, the experimental, the *aposteriori* method—the only possible means for arriving at these truths—displaced all others. And despite ribaldry, anathema, ostracism, persecution, dungeon and death dealt out to those who followed it, its triumph with the intelligent and informed is complete.

*Sir Isaac Newton. His conclusive evidence that comets move in accord with that law was deduced from observations of *1e* that came a few years later, in 1680.)

II.

WHAT EVOLUTION MEANS

Among the better informed people of the world to-day, the fact of the great law of evolution has ceased to be a matter for disputation. They disagree often quite materially as to the mode or process by which the various results of evolution as we now see them have been accomplished. That every object in the material universe of which we have any knowledge has been evolved from other forms of matter, through the operation of natural law, is now as staple and fundamental a proposition as is the law of gravitation or of the mechanical equivalent of heat. On matters of detail in the evolving process, scientists may and do disagree; but not as regards the general statement here made.

To the unschooled mind, the term "evolution" conveys but one thought; and, consistently, that thought is of a matter not essentially a consequence of the workings of that great law: "According to that theory, we are descended from the monkeys." And with this summary of their ignorance and assumed superiority, they dismiss all thought or consideration of a law whose field of operation is as wide as the universe and as eternal as time. So far as concerns the question of descent, it would probably be just as rational to charge that the monkeys are descended from us; for little doubt now remains that, in the remote past, there lived a type from which both have descended--a type that was entirely neither, yet potentially either.

Paucity of ideas, incompetency as witnesses of phenomena and the stultifying effects of erroneous early mental training are here, as in many other similar cases, clearly

manifested. Here is a law under whose domain universes are forming, growing to fullness and sinking into decay; a law suggesting the certainty that we are not only inferior to what we may become in the future, but also an extremely reasonable probability that we are also inferior to other beings that now throng planets of the distant suns that we call stars. And this is the truth that is thrust aside because its acceptance might reflect upon the remote ancestry, say, of some descendant of a Germanic tribe (as we practically all are) of whom history can record: "The women cut the throats of the war captives and read portents in the flowing blood. The men courted death in battle that they might thus qualify to enter elysian fields and the palace of Woden where they could feast and fight forever." (Those who died of illness or of old age, went to the land of ice and frogs.)

The law of evolution is applicable alike to the inorganic and the organic world. It applies with equal verity to our vast solar system or to a blade of grass. Evolution, in the one instance, means a change as from original, homogeneous, nebulous matter to a central body with its satellites—from that homogeneous cosmic dust to the more or less heterogeneous air, water, granite and limestone; in the other, a change from the formless, homogeneous, protoplasmic unit to the heterogeneous and more or less differentiated higher forms of life.

And more. It is in the light of this great law that we trace not only the development of man from lower forms of life, but the unfolding, the succession, the progress of his institutions of every nature. And it is with this phase of evolution that this volume largely deals.

Nor is the ceaseless changing from the homogeneous to the heterogeneous or complex the whole com-

pass of the evolutionary processes. In the laws of evolution, gravitation and the conservation or persistency of energy and matter, we read not only of the formation and life-history of things, but of their end, their doom as well. We not only know, for instance, that our solar system was through millions of ages evolved from some form of nebula, but that in time it must sweep on through the blackness of space, a frozen, lifeless mass. It was born, it is growing to maturity, and it must die. The sun must go out in darkness (as have already all its planets) as surely as a reservoir must exhaust if more water constantly leaves it than it receives. It is moving through space at some twelve or fifteen miles per second, and if in its wanderings, it should collide with another sun, its matter would be wholly or in part reconverted into a nebulous mass and the process of reconstruction of suns and worlds must begin over again. Thus have the individual atoms that now compose our living bodies been elements in other forms of life both plant and animal; and when we are through with them, they will pass on and perform a like function for those who may live a million years from now.

We can here with profit devote a few pages in brief review of the events and discoveries that finally revealed to man the evidence that neither our solar system nor our earth was brought into existence with any suddenness—that each was evolved in accord with natural law acting through aeons of time.

The discovery or demonstration of a law of nature is usually ascribed to some single individual, and, to the masses of mankind, that law is but the embodiment of his brain-product—a sort of Minerva that sprang full fledged from the head of a Jupiter. This is but evidence of our indisposition to look deeply into things and of our disposi-

tion to worship heroes. For instance, the discovery of the law of gravitation is popularly attributed as in fee simple to Sir Isaac Newton: when, in fact (passing over the necessity for a minor division of his priority with at least two of his friends), its enunciation by him without his having had access to the fruits of the labor of preceding scientists, astronomers and mathematicians would have been as impossible as for Mr. Edison to have perfected his inventions unaided by the whole succession of electrical inventors, discoverers and demonstrators. Newton's great work is but one factor in a product; and while one factor may be of greater numerical value than another, all are essential.

To appreciate the sublimity of Newton's achievements, we must know something of their antecedents—we must at least study the work of his lineal predecessors in the astronomical world, Copernicus and Kepler. In the results of the labor of these three men, we have a striking instance of successive steps in the search for truth, in the development of thought—in the evolution of a great discovery.

The mighty work preliminary to the revelation of the law of gravitation began with Copernicus who lived from 1473 to 1543, two hundred years before Newton's time. The next essential step was taken one hundred years later when Kepler had finished his labors. The triumph came at the end of another century in the formulation of the great truth by Newton.

The theory of our solar system and, for that matter, of the universe, that prevailed prior to the time of Copernicus, is known as the geocentric (earth-center) theory. According to this theory, the earth is a vast body around which all the heavenly bodies revolve as a center, just as

they appear to do. The stars and planets are set in various spheres and ~~usually~~ attended by some sort of guardian spirits. Each shining orb, ~~including the sun and moon,~~ was especially created to minister to the delight, the edification or the material needs of man. Man, therefore, was the prime consideration, the ultimate end of all thing.¹ Hence, the anthropocentric (man-center) theory follows as a sort of corollary of the geocentric.

The work of Copernicus was to disprove the old tenets and formulate the heliocentric (sun-center) theory. In this, as the name implies, the sun is the center of our system. The earth is but one of the planets and, like all the others, revolves around this central body. The rising and setting of the stars and other celestial objects is only apparent and due to the earth's turning on its axis.

Such teachings were a very radical departure from the old standards and shocked the papal world beyond endurance. In fact, for many years Copernicus communicated his convictions to a few chosen friends only, refusing to publish them through fear of the popular prejudice that they would awaken. The consignment of the earth to so subordinate a position—a mere brother to the little wandering points of light that they knew by the name of planets—and the corresponding degradation of man, was the greatest shock that our supersensitive forefathers ever received. Neither populace nor authority would harken to it; and even a century later, Galileo was directed by the constituted authorities, the Sacred College, to speak of this heretical theory only as a hypothesis.*

*Galileo was ordered not "to hold, teach or defend" the condemned doctrines. Authority held such teachings as "absurd in philosophy, and formally heretical, because expressly contrary to Holy Scripture." Ency Brit.: Galileo.

But the work of Copernicus was done, and all the powers of darkness, ignorance, prejudice and superstition could not undo it. And while we glibly sum up this life's work of his in a few brief sentences taught us in childhood, let us in a sober, thoughtful moment recall that his task was one of the most profound ever performed by man. After fifty years of thoughtful, skillful, incessant toil, at the age of three score and ten, a few hours before his death, there is placed in his hand the first printed copy of his revolutionary thought.

Copernicus knew of no reason for the planets' going around the sun in orbits all practically in the same plane. It was his mission to prove that they did go around and one human life is none too long for such an undertaking. The laws of their motion and the reason for what seemed their peculiar actions remained for others to discover. The reason for their being in the same plane will escape both Kepler and Newton and continue a task for their successors. Copernicus therefore consigned them to the care of especially commissioned guardian spirits.

Kepler as a young man took up the study of the heavens. He was soon convinced of the truth of the system outlined by Copernicus and gave much attention to the details of planetary movements. From many observations of his own and from the mass supplied by his predecessors, he came to the conclusion that the planets do not move in circular orbits. What, then, are the orbits? In search for answer to that question he proceeded just as did the philologists in deciphering the meaning of the figures on the Persian tablets—a good sample of guess and try. He assumed various orbits and then applied mathematical tests to ascertain if the observed movements

of these bodies conformed to the requirements of his assumption.

After a long series of years, he not only learned that the planets move with mathematical precision, but he had demonstrated the laws of their motion. These laws may be briefly summarized as follows: First—The orbit of a planet is an ellipse with the sun in one of the foci. Second—The radius vector of a planet (a line joining the center of the sun and the center of the planet) sweeps over equal areas in equal times. Third—The square of the period of revolution of a planet is proportional to the cube of its distance from the sun.

The earth, for instance, when nearest the sun moves more rapidly in its orbit than when it is more remote from the central body. In the first instance it moves, say, in ten days, from point A to point B of the orbit. If these two points are joined with the sun, these lines with that part of the orbit between them, forms a sort of triangle. If now two other points ten days apart are selected when the earth moves more slowly, and are similarly joined to the central body, another triangle is formed that is not so wide as the first, but is somewhat longer. According to the second law, the two triangles are equal in area. By the third law, if a planet goes around the sun, say, in eight years, its distance from that body is four times that of the earth, as the square of eight is the cube of four.

By application of these laws, Kepler was enabled to predict just where a planet would be in its orbit at any moment of time in the future or where it had been in the past. This afforded opportunity for as severe and as technical a test as could possibly be applied. And it was in application of these tests that there was revealed one of the deepest mysteries that ever confronted the scientific

world. Observation disclosed that a planet would sometimes be a little ahead or a little behind the predicted position. How could this be? What could at times vary its motion in its orbit? The answer to these questions will consume the labor of another great life. The reason for planetary perturbation must be found; and nearly one hundred years later Newton found it—a natural consequence of their mutual attraction as they approached or receded from each other in their circuit of the sun.

But Newton did not arrive at such a conclusion by a single bound. Far from it. He first labored with moving bodies near the earth's surface—in his laboratory. The laws of motion as previously formulated by Galileo and Huygens were elaborated and their application tested to the last possible degree. The old idea that "natural motion is in a curved line" was totally refuted. The rate of motion of a falling body is constantly and regularly increased—accelerated. The application of this discovery formed an interesting and important chapter in his work. Why should the rate of motion increase unless the body were acted upon by a constant force? What is the source of this force unless it be in the earth itself? If the earth attracts a body and causes it to fall in his laboratory, why should it not act upon the moon in the same manner? If it does so attract the moon, why does not that body fall to the earth? It became apparent that the tendency of the moon to follow a straight line, its resistance to deflection, its so-called "centrifugal force," must be just balanced by the earth's attraction, thus maintaining the curve of its orbit. And thus he reasoned from falling body to moon, from moon to planet and from planet to the universe of bodies. Every movement in earth or heavens met every requirement of the great law that he

was testing. His laboratory became the infinity of space. The truth was revealed through its demonstration; and he triumphantly proclaimed what should have shaken the world: Every particle of matter in the universe attracts every other particle with a force varying directly as their masses and inversely as the square of their distance apart.

Copernicus had proved that the planets go around the sun in the same plane. Kepler had shown the laws of their motion. Newton had demonstrated why those laws are true. But how came the planets there? What set them in motion? Why do they move in the same plane and the same direction? Newton's answer to these questions was the answer of the mythologist: They were created, placed in position and set in motion by the arbitrary act of the Creator.

Evidently there was still open a field for the scientist. Such an answer could not long suffice in view of what had already been learned of those bodies. Such men as Kant, Herschel and Laplace could not accept it. The thought that these bodies were each originally a part of a common mass of matter; that they acquired their motion and their position from the action of gravity within that original mass; that the matter of which the sun and planets is composed was once a nebula filling the entire space now occupied by them, offered not only a reasonable explanation for their common direction in moving around the central body, but also for their common orbital plane. Both characteristics were acquired from the motion in the original cosmic mass. Verification of this conclusion was abundant in other parts of the universe. There Herschel, by the aid of his telescopes, found nebulous masses and solar systems in many different stages of development. He claimed as convincing proof that ours had developed

from such a mass as a forest presents of the growth of large oaks from smaller ones. Laplace applied to the problem his wonderful mathematical genius as have others since his time. While all do not agree as to the details of the method of the evolution of these bodies, there remains not a scientist of today who questions the general proposition of the nebular hypothesis.

Scientific methods are at last triumphant. Out of this revolving mass of cosmic dust, through the millions of ages of the past, the vast solar system has been evolved. Through aeons of time, this evolutionary process, this ever changing from the homogeneous to the heterogeneous, has gone on till sun and worlds were formed, cooled, crusted over, and, at least in one instance, prepared for the advent of life.

But the evolutionary process does not cease after our earth has cooled, condensed and crusted. Upon this relatively homogeneous crust, the rain, the running water, the ocean, the wind and the frost are ever at work. Broken and slowly heaved into ridges by shrinking, the greater altitudes are subject to ceaseless disintegration. The loosened particles are carried to lower levels where, under the action of moisture, heat and pressure, they are transformed into vast layers of granite, limestone, sandstone, shale and all the other ingredients of stratified rock.

There is no cessation from the work of disintegration and denudation. The stratified formations are in turn uplifted and exposed, then at least partly cut away and carried to the new levels; and along with their materials go the primitive forms of life that eked out an existence upon them or from the waters in which they were deposited. And thus is written the earliest records of the

rocks and the first chapter in the long history of life on our planet.

Ceaseless disintegration; ceaseless uplifting or submergence of surface, ceaseless changing of lake, land and sea, ceaseless formation of new strata, ceaseless burial of new and higher, ever higher forms of life, till man himself is reached—this is the sublime drama that the geologists and the naturalists have been reading for a century.

Thus our earth, like our solar system, is a growth, a consequence of the never ending evolutionary processes. The geological strata, like the leaves of a mighty book, for ages concealed their sublime mysteries. Little by little their story has been unearthed. The gist of that story has already been intimated. The surface of the earth is composed of various formations laid down in the different earth-ages. The lower formations belong, of course, to the remoter periods and contain none or only primitive life-forms. As we proceed to the more recent strata, the remains of life of higher order, of more perfect differentiation, are encountered. That story, when we consider the brief time of its interpretation, and the relatively small part of the earth that has been subjected to thorough search, is one of marvelous continuity. There are no exceptions in the order of formation; the story of life upon our sphere is practically complete. It begins with the formless, homogeneous, undifferentiated cell; it ends in that thoroughly differentiated organism, man. The rocks and the life-forms are alike the results of evolutionary processes, the one in the inorganic, the other in the organic world.

Nor is this the end of the revelation given us by the geologist and the naturalist. We know that world building is going through the same processes on every planet

on whose surface the requisites exist for disintegration and denudation. And what reason have we to question that if life-sustaining conditions obtain anywhere outside of our sphere, life is there?

But the life-sustaining conditions of which we are cognizant, or at least those in which our higher forms of life, the mammals, for instance, could exist, are primarily too accidental to be prevalent among the planets of the universe. For instance, among the requisites to life as we know it is free oxygen, either as it is in the air, or in a diluted quantity as in lake or sea. Now if in the period of chemical union that must have accompanied the condensation of the earth-material, there had been present more hydrogen to combine with the oxygen, our planet would have had more water in its composition, but less or no surplus oxygen for its atmosphere. If its nebula had contained more silicon, the completed planet would have possessed more quartz, but at the expense of its life-giving oxygen. Our atmosphere is evidently but the surplus nitrogen and oxygen in the original cosmic material. It is far too much to assume that the same or even similar conditions are general in nebulae out of which such bodies are constituted. But if such conditions do exist in the formation of one planet in each hundred thousand, there are many thousands of planets whose atmospheres are what we know to be life-sustaining.* Likewise, life-conditions would be affected by the mass and specific gravity of a planet, by the nature and quantity of liquid upon its

*Early in 1913, the Astronomer Royal of England reported a counting of the stars, that is, of suns and solar systems, just completed after two years' labor at the Greenwich Observatory. By the use of photographic methods this count includes all down to the sixteenth and seventeenth magnitudes. "The total is fully fifty millions."

surface, by the amount of heat that it received from its luminary. On the surface of Mars, one would weigh but forty-six hundredths as much as on the surface of our earth; on Jupiter, one's weight would be increased two and sixty-four hundredths times. In other words, the gravity of Jupiter would kill us if every other condition were just what we demand.

It must not be assumed, however, that our little planet has a monopoly of the conditions in which life can develop. Life as it is presented to us has developed in the conditions with which we are familiar and is just such life as those conditions will tolerate. It must be kept in mind that the conditions existed first and life-masses were forced to accommodate themselves to environment. The conditions were not made for life-accommodation; but life was evolved, and could evolve only, along such lines as the conditions would permit. We can live in high altitudes, in an atmosphere but half as dense as that in which we were developed; but it does not follow that our race would have developed in such an atmosphere. What would have been the earth's life-attainments if our atmosphere had been half oxygen instead of one-fifth; had the oxygen been diluted with some gas other than nitrogen; or had any one of many such possible conditions obtained, is wholly problematic. We must, however, grant the possibility and the high probability of other planets in the universe whose conditions for life-development are superior to ours. If so, the superior beings are there or will be there if the conditions continue. Of that we are as sure as of any other conclusion ever drawn from inductive science. Evolution is not a respecter of celestial spheres.

III.

HOW LONG?

Scientists are very conservative in their declarations. With them philosophizings, speculations, guesses or even estimations are to be wholly avoided or at least indulged in with great circumspection. They demand in all things either positive proof or evidence of probability of a high order. They are merciless critics of each other; their reputation is at stake in their every utterance. A material error in the interpretation of phenomena or a declaration with any degree of positivity that cannot be conclusively defended, will probably leave a wound from which it is indeed difficult to recover. But when proof is established, when a truth is revealed, the true scientist has ceased to fear the ignorant scorn of mankind that its promulgation may awaken. No matter who may suffer from the shock, no matter what monuments of the past may be shaken or destroyed, no matter what idols may be broken or deifications dethroned, his proclamation of truth is modestly penned and he stands ready to defend its claim to recognition.

If the revelation be revolutionary, its acceptance is very slow. Preconceived ideas, deep-seated convictions and tenets of long standing and marked import are not subject to sudden reversal or even material modification in the minds of the unscientific. Descriptive of the masses of mankind, "conservatism" is but an euphonious substitute for ignorant prejudice. And even among those whose assumptions are to leadership in thought, we find a stubborn tenacity in clinging to the orthodox that, in the light of subsequent history, is often truly startling. History

tells us that when Newton died he had not twenty followers outside of England. The astronomer royal of England himself refused him due assistance in his great work. Allusion has already been made to the persecution of Galileo for his advocacy of truths of even a century's authoritative standing. And thus has it ever been with all that called for radical change or readjustment in any line of thought or activity. The revelations burst upon the world in seeming volcanic fury. They were met by an almost equal repellant force. They were driven into secluded quarters and discussed only among the initiated. Slowly the truth seeped down upon and was absorbed by the masses. Then institutions began the process of revision, reconstruction and readjustment of tenets and theories. And the world plodded on in the new regime wondering that it were ever otherwise.

Nor must we here overlook the fact that opposition to the radically new springs not solely from ignorance and prejudice. While these may appear as the forces most glaringly in evidence, they are to a great extent but the mediums through which the real opposition accomplishes its nefarious purpose. The source of this real opposition is found to be vested in temporal power; and that power springs from economic conditions. Firstly, the new thought, in its iconoclastic marches, not only destroys the ancient idols through revelation of the fraud, or deception or untenability in their claims to recognition, but also brings humiliation upon the heads of the idolaters. The necessity for the admission of error and falsity in their former teachings—for the re-wording of tenets and creeds of long standing—for the abandonment of the "faith of the fathers"—for the recasting of the "authoritative" and the "infallible"—is a humiliation that mor

tallty would fain avoid. The exceptions to this among men are the few who possess the spirit and devotion to truth that characterizes the scientist. They are the few who stand ready to discard any number or manner of opinions, to consign to the scrap heap their hitherto dearest treasures, their life's work, the moment aught else is presented that renders a hypothesis untenable. In the second instance, doubtless the most powerful influence that contests the ground of the advanced thinker, springs from economic sources. The acceptance of a new and radical theory, especially if it were sudden, must seriously menace systems of power, or privilege, or extortion. To this the privileged will not submit; and as they are the world's economic masters, the new faith is barred and banned from all possible means of communication to the masses. This is alike true whether that privileged class be represented by a Roman pope of the fourteenth century or an American multi-millionaire of the twentieth.

But to the matter directly in hand. How long has man lived upon the earth? The scientist is wisely conservative. In effort to answer the question in definite terms, he could not do more than make an intelligent guess, and in guesses he does not indulge. He will tell you "a long time; many, many thousands of years." Of this he has ample evidence; of the exact chronology he knows so little that he says practically nothing. He leaves the field of certainty in such things to the popular lecturers, preachers and other such functionaries.

In the first place, very few of the events in the history of man have ever been written by contemporaries of those events. And a vast deal of what has been so recorded is so thoroughly tainted by assumptions of the

supernatural, by incompetency of witnesses, by superstition and myth, by necessity to "hang on princes' favors" and by inability to grasp what is really the significant elements in the transpirations of an epoch, that it is practically worthless. A matter of some five thousand years or less covers this period entire; and five thousand years is an insignificant fraction of the "long time" comprehended in the answer of the scientists.

Where, then, does the scientist find evidence of the period of man's stay upon earth and of his doings in the remote past? He finds it buried in sea, lake, cave and mound; in the river bank and in the level plain; in the glacial gravel and in the solid rock; in the hieroglyphic records of nations dead and in the lives and institutions of the savage and barbarous tribes of historic times. Here he finds abundant evidence not only of man's antiquity, but of his modes of life—his food and his method of securing it, his means of defense and his manner of warfare, his relative attainments, his racial status, his manners and customs, his religious conceptions, his governmental and social organizations, his institutions of whatever nature. All this the scientists have found and they have translated it for us in terms untainted by the corrupting influences that have marred the records of our period of so-called civilization.

As a simple illustration, a scientist digs into a cave or mound and finds a skeleton of man. He notes carefully the stature, and the relative length of arms, legs and other parts. From the head he determines the cranial capacity, the facial angle, and to which of the two great divisions of the human race the subject belonged—the long heads (*Dolichocephali*) that predominate in the tribes of Africa, or the short heads (*Brachy-*

cephali) that inhabit Europe and Asia.* From these in conjunction with his dentition, the form and relative size of his nose, the prominence or deficiency of chin and the strength and figure of jaw, a good line is obtained on his mental status. If the skull wore "royal decorations," this was a chief—a certain index that he and his fellows had attained a degree of social and governmental organization that was at least tribal in extent. Flint arrow-heads are found. When these are analyzed, he is classified in one or the other of two important divisions—the old stone (palaeolithic), or the new stone (neolithic). Some pottery indicates that his tribe had evolved through three stages of savagry and had entered at least the lower stage of barbarism; and the workmanship of the pottery may, in itself, advance him a notch or two higher. There are utensils in that grave. They were put there to be used by his other self when it reached what he conceived to be the abode of his departed tribesmen. Their nature is a certain index of how he expects to spend his time in the vast forever. Possibly other and undecorated skeletons accompany his. They may be of wives or slaves or of both, slain at his grave that their spirits may serve his in the new abode as themselves served him in the natural life. Some trinkets indicate that he was a fetich worshiper of low order; or perhaps they are of an order that places him on a vastly higher plane, even verging on concepts of anthropomorphic (man-form) deities.

There is an indelible and readily translatable life-record in that grave. The literal counterpart of that life is found in the lives of extant savages and barbarians in

*It is worthy of note that the long-head and short-head apes each are indigenous to the same part of the earth as that in which the corresponding divisions of man are found.

various parts of the earth. They are now in the status that he had attained; and they are doing and thinking as he did and thought, though they may be separated from him by thousands of miles and by tens or hundreds of thousands of years.

In order to aid a reader unschooled in the meaning of geological terms that must be used in the classification of relicts of the life of the past, let us recall that the vast period of geologic time is designated in four grand divisions—the archæan or azoic (without life), the paleozoic (old life), the mesozoic (middle life) and the cenozoic (recent life). The last, or cenozoic, the one with which we are herein concerned, is subdivided as follows:

Cenozoic	{	Quaternary, or Age of Man	{	Recent Champlain Glacial, or Ice Age
		Tertiary, or Age of Mammals		Pliocene Miocene Eocene

Man has been distinctly traced, by finding his remains in undisturbed formations of earth and rock, through the Recent, the Champlain, and deep into the Glacial period, if not through and beyond it into the Pliocene.

These geological periods represent stretches of time that make the era of which we have written records appear as but yesterday. The Glacial, or "Great Ice Age," is itself a double period. "According to Gilbert and Russell, there are abundant evidences of two flooded periods separated by a period of complete dessication (drying up)." (Le Conte: "Elements of Geology," page 507.)

These "flooded periods" resulted from the melting of the vast sheeting of ice that during the Ice Age accumulated over the northern quarter of the earth. The melting was due to a change of climate; and the climatic change was a consequence of one of two things or possibly to a combination of both: First, the subsidence of the land over which the ice lay. Second, a slow, periodic change in the eccentricity of the orbit of the earth in conjunction with the precession of the equinoxes. Such changes take place only through tremendous lapses of time; and may be repeating at the present with such minutia that they are not as yet distinctly discernible.*

We are now qualified to understand more clearly the evidence that follows (and it is but fragmentary) of the period of existence of our race.

"In October, 1907, Mr. Schoelensack, a German scientist, who for twenty years had been watching the working of a sand-pit near Heidelberg, in the hope of finding there the remains of a fossil man, exhumed from a stratum belonging clearly to the lower Quaternary, if not to a layer between this and the Pliocene, a remarkable jaw-bone which he regards as that of the oldest known man, perhaps even of a precursor of man.

"This precious find was made in the Mauer sand-pit, at a depth of eighty feet. . . . The jaw-bone is admirably preserved and has all its teeth. . . . The general thickness of the bone is almost double that of modern jaws. On the other hand, the teeth are not so large as those of modern man, and their form is absolutely human; all are pressed close together and no one is longer than the others." (See Literary Digest, April 17, 1909.)

*Scientific works that discuss these references are abundant and may be procured from any public library.

Flints held by some to be the work of man have been found in the strata of the Miocene period, but their origin is disputed. Says Professor Le Conte: "The Miocene man is not acknowledged by a single careful geologist. Mortillet thinks that there may have existed in Miocene times a tool-making animal, but not true man." *(Elements of Geology, page 608.)

In any standard work on geology can be found an account of the Engis skull. This was found in a cave on the banks of the River Meuse, beneath a stalagmitic crust and associated with the bones of animal species now long extinct. It belongs unmistakably as far back as the middle of the Quaternary period. Likewise of the celebrated Neanderthal skull that is assigned to an earlier period. It is less distinctively human, but is not ape.

Again, the geologists all tell us of the Mentone skeleton and of the Aurignac cave. The former was a perfect skeleton of a palaeolithic (old-stone) man of average-sized skull and a facial angle of eighty-five degree. It was found near Nice, Italy. Around the skeleton were flint implements and the remains of the chase, viz., bones of reindeer, perforated teeth of stag and so forth. Of the latter, twenty-two lay around his head. They undoubtedly had formed his chaplet. Le Conte says of him: "This Quaternary man seems to have laid himself down quietly in his cave-home and died and nature covered his grave with a tablet of stalagmite."

In the Aurignac cave of France was discovered the burial place of a family or tribe. It contained seventeen

*This was written some years ago. There are doubtless now no scientists who would admit the existence of a tool-making animal not man in any age.

well preserved skeletons of men, women and children, together with numerous entire bones of extinct species of animals. Among these were bones of cave-lions, cave-hyenas, mammoth and rhinoceros. There were found gifts in the form of trinkets and food. From the evidence of the funeral feast, we infer that they practiced some sort of religious ceremony and imagined that the soul needed food in its eternal home.

In 1888, there was exhumed from a gravel pit at Galley Hill, England, on the bank of the Thames River, 170 feet above the lowest level attained by the river at that point, a human skeleton that had been there from the time that its position was the surface level of the stream. In writing of this find in the Illustrated London News of March 4, 1911, Dr. Arthur Keith, conservator of the museum at the Royal College of Surgeons, London, says:

"The skull was eight feet from the surface of the gravel and two feet above the chalk—too deep to be accounted for by supposing it to be a burial. . . . The overlying gravel was in its natural and undisturbed state. . . .

"Altogether the level of the Thames has been raised or lowered 170 feet, and there is no reason to believe that these changes have not been uniform.

"We must judge of the past by what we know of the present, and on this basis the land movement is a slow one, for as far as can be now told, the level of the river has scarcely changed since the Roman period. If, then, a movement of a foot is allowed for each thousand years, one may with some safety assign at least a period of 170,000 years to the period which has elapsed since the high-level terrace was laid down at Galley Hill. Further research will probably show that the period is much

longer, and that the land movement is much slower than is presumed here."

And so we might go on through the successive ages. That is not here necessary. For exhaustive reading along these lines, the student is referred to the libraries. He can easily find it in abundance. Sufficient has been given to prove that man has been upon the earth for a very great period of time since he began to leave the more imperishable evidences of his existence—a time not exaggerated even if treated as hundreds of thousands of years.

And we must not overlook the fact that the being semi-man and even what might truly be denominated man, occupied at least some parts of the earth before he had learned to use fire, or the bow and arrow, or to make flint or stone implements, for a period longer than all the years and ages that have passed since he learned those arts. Man does not by any means begin as a manufacturer of implements. For many ages, he was more expert at tree climbing than even at throwing stones. In many of the cave sepulchres, geologically old as they are, were found carved instruments that indicate a mental status and an art attainment by no means coincident with our really primitive ancestors. They are not even characteristic of the truly savage. The history of man stretched far into antiquity long before he had executed any such handiwork.

IV.

WHY SPECIES EVOLVE

The theory of evolution, as now applied to plant and animal life, is, almost wholly, a product of the last cen-

ture's thought, investigation and experiment. Like other great theories, it is itself an evolved idea. It is the ripened fruit of a long series of studies of life-forms, comparative anatomy, biology and geology.

It is far from imaginative to hold that the labors which led to the discovery of this great fact in nature opened formally with the work of Linneaus (Linne) who lived from 1707 to 1778; though he had no more conception of aiding in the development of such a thought than had Copernicus of laying the foundation for the nebular hypothesis.

Linne's perfecting of a method of classification of plants and animals, a method that with some modification is still in vogue, led to a more intense study of comparative anatomy than had hitherto obtained. The intimate relation, the almost oneness of species theretofore looked upon as disassociated, separate and special creations, was in itself a revelation. While he and his contemporaries would have been shocked at the suggestion that the various species of a genus, such as the horse, ass and zebra, were the descendants of a common original type—had, in the remote past, a common ancestry—it was such a study of species as his methods imposed that soon suggested the "shocking" conception.

Then the study of geology opened a vast and hitherto unexplored field. Extinct animal remains presented an array of fauna so thoroughly graduated and so extensive that its significance could not escape the naturalists. They soon began to discount the idea of special creations. In a vain effort to preserve this old tenet, various hypotheses were forthcoming. One of these was advanced by the deservedly celebrated Cuvier and later championed by the great Agassiz. It is known as the catas-

trophic theory. This theory sets forth that there have been various periods of special creation, corresponding to the several geological ages. The Creator, it claimed, closed each with a tremendous cataclysm destroying the life of the world; and then opened the new era with a series of creations of a higher order than those of the preceding epoch. But when it was found that many species were common to two or even more of these eras and that others came into prominence near the end of one period and flourished through the succeeding one, or part way through it, the theory, despite the renown of its chief advocates, was wholly discredited. Others contended that while the various species of a genus doubtless descended from a common parent stock, that primitive type at least must have been especially created. It was then admitted in many quarters that while the evolutionary theory must be accepted as applicable to animals in general, an exception must be made in the case of man. He, at least, must not be subjected to such indignity as acceptance of that theory imposed. But finally, in this case, as in all others, all compromises with mythology were abrogated and the facts as scientific research reveals them, were accepted without adulteration.

The poet-scientist Goethe caught a deep insight into the real significance of what his contemporaries were unearthing and took, early in the contest, an uncompromising position for evolution. But his works are not of the character necessary to the permanent establishment of a revolutionary idea or theory. They are not to be mentioned in connection with such as the world inherits from Copernicus, Newton, Laplace, Lamarck, Darwin and Marx.

The Frenchman Buffon penetrated to surprising

depths in search for proof of the mighty thought embodied in the word evolution. But the old foe of advanced ideas, the hierarchy of the established church, met and practically subdued him. His lack of courage, in all probability, cost him a place of prominence in the world's hall of fame.

It remained for another Frenchman, Jean Baptiste Lamarck (1744 to 1829), to grow to manhood endowed with the intelligence, industry and courage necessary to establish this great theory on at least a semi-scientific basis. He lived amidst scorn, satire, anathema, denunciation; he died forsaken and in poverty. Today his name is spoken with reverence; his persecutors, "saviors of society and the Faith," with one notable exception, sleep in merited oblivion. That exception is Cuvier, whose one great weakness is revealed in his illy considered treatment of his most worthy fellow scientist.

Reflecting upon the attitude of Cuvier and Agassiz toward the theory of evolution and such advocates as Lamarck, the author is reminded of an excerpt from a lecture delivered by Dr. David Starr Jordan and to which he had the pleasure of listening. In substance, Dr. Jordan said of Agassiz: "He was the greatest opponent of the theory of evolution. He was the greatest teacher of natural science the world has produced. Therefore, his students all departed from him evolutionists."

It is not necessary here to enter into a discussion of the propositions upon which Lamarck based the theory of the transformation of the old species and the origin of new ones. Those propositions, and especially the one that postulates that acquired characteristics are inherited (to which we will refer later), have been a fertile source of contention among scientists for many years. Suffice it

to say that he put the theory upon a working basis for his successors. He made the world give ear to his message. He paved the way for his "greater than I," Charles Darwin.

On the 12th of February, 1809, two babes were born, each destined to marked instrumentality in shaping the thought, conduct and affairs of men. Liberation from slavery, broader and deeper democracy, a readjustment of man's concept of relations that should or do exist between man and his fellow man and between man and his fellow animals—in these attainments each was to play his revolutionary role. The one, Abraham Lincoln, at the psychological moment, was launched upon the political and economic sea; the other, Charles Robert Darwin, enters the combat for the liberation of mind through the establishment of truth scientifically deduced. Either, at a different hour, would probably have died unhonored and unsung. Each lived in the environment and at the time that called for the accomplishment of just what he did. Each filled the niche that circumstances opened and filled it well. The day of chattel slavery was waning; the dawn of the industrial trust was red. The mantle of dominant mythology was lifting; the world groped toward a new light.

Darwin ascribes all modifications of species and consequently their origin to three facts in nature: 1. Heredity. 2. Variation. 3. Natural selection, or the survival of the fittest.

That plants and animals inherit the general characteristics of their progenitors is obvious to all.* But in re-

*It should be observed in this connection that a child, for instance, is not born solely of a man and a woman, but of a race. One has two parents, four grandparents, eight great-grand-

gard to the scope of heredity—the inheritance of special, or more strictly speaking, acquired characteristics—there is, or at least has been as intense and elaborate contention as any in which the scientific world ever indulged. You may know, for instance, two men, each of whom has two fingers wanting. One was born with the defect; the other's fingers were removed by accident or by a surgeon. The one hand represents an inherited, the other an acquired characteristic. On the question of transmitting the inherited deformity there is no necessity for argument. Animal life presents too numerous instances to leave the matter undetermined. So persistent, though by no means uniform, is the law of inheritance that such abnormalities as hare-lip, club-feet, crossed eyes and the like will reappear in the offspring "even in the third and fourth generations." But of the characteristics acquired wholly after birth, who can cite an instance to prove that one was ever transmitted to progeny? This is the

parents, sixteen great-great-grandparents and so on indefinitely, each generation doubling the preceding number of lineal ancestors. The fifth generation, therefore, gives one 32 forbears; the tenth, 32 times 32, or 1,073; the twentieth, 1,048,576; and the thirtieth, 1,073,741,824—a number equal to the thirtieth power of 2.

Allowing forty years to the generation, this carries one back but 1,200 years. It therefore follows that if one could trace his actual ancestral tree for even so brief a period of time, if it indicated no marriage of cousins of any degree, the last generation alone must contain more than a billion names.

But 1,200 years ago it is extremely doubtful if there were a billion people on the whole earth. Hence, if one's pedigree is purely Caucasian and European, it could not possibly include more than one-sixth of the people of the world. Evidently then, such a catalogue of ancestry must of necessity show that each of us has an average of from six to ten lines of descent from every white European who lived at that time and whose progeny still survive.

question that so deeply agitated the world of science during the last quarter of the nineteenth century.

Lamarck had practically based his philosophy upon the inheritance of acquired qualities. Darwin had indorsed it. Spencer and a train of others had accepted it ready made. Then the great German Weismann said nay and the strife opened. It is in nowise essential to the theory of evolution. The only question was, is it a fact, and, consequently, a factor in evolution? Theories of heredity, all that was known and much that was not known paraded before the footlights of the scientific stage for years. Heredity is a fact in nature. There is a law governing it. What is that law? So life, electricity, gravitation are facts in nature; but there is something yet to be learned about their essential qualities. So there is about heredity. It is presumptuous to assert that this knowledge is unattainable; but as yet, it certainly has not been attained.

Variation is manifested in the unlikeness of the offspring to the parent. It is just as obvious as heredity. Every family presents evidence of this work of natural law that is patent to the most untrained observed. The child is like either parent; but it is also unlike either. And the scope of this wonder-working variation merits thoughtful note. So far as concerns the living things of earth, no other fact in nature is of such prime importance. If inheritance were absolute, development, higher forms of life, would be impossible. On the contrary, variation is omnipresent. There is not an organ nor a function in any form of life, plant or animal, that is not affected by it during the formative process of that organ. Whether it be the relative length of arm, neck, nose or other member of the body; relative size and strength of the heart,

lungs or liver; quantity and quality of blood, bile or gastric juice; acuteness of the sense organs—eye, ear, nose, tongue or nerves; size and composition of brain—every functional part of the body of a child is not only subject to variation from the corresponding part of either parent, but actually presents a departure therefrom. There are no two absolutely alike in any detail.

It now becomes at once apparent that one or more of these numerous variations may result in advantage to the individual in which they occur. They add strength to his ability—his fitness—to live, to defend himself, to procure food, to join in the chase or combat, to win a mate, in short, to meet the obligations that are thrust upon him in life. And it is likewise equally apparent that some of these variations effect a disadvantage, are a source of weakness.

Let us glance briefly at what may be termed the theory of average requirement in plant or animal existence. If we select an animal in a state of nature at any given time and locality, we find it subjected to a series of conditions with which it must contend in order to make "a success of life." It is, among other things, necessary (1) to procure food, (2) to defend itself, (3) to withstand all inclemency of climate, (4) to reproduce its kind.

In the procurement of food, as in all else, the animal must adapt itself to circumstances. It must accept such food and in such quantity and locality as its surroundings provide. It must not only be qualified to procure this food, but must be equipped with proper apparatus to masticate, digest and assimilate it whatever its nature. It must be able to endure such hunger and fatigue as temporary shortage in supply may impose.

Defense must be made not only against its fellows, but also against all that prey upon our subject. That defense may depend upon ability in individual or in co-operative combat. It may depend upon cunning in concealment either in such places as nature provides, or in those that the animal itself constructs. It may depend upon swiftness in flight, either of foot or wing; on strength of muscle; on use of jaw or claw. Defense also implies the mental qualification and the disposition to protect the young until they can protect themselves.

The ability to withstand inclemency of climate calls for not only a consistent covering for the body, but for systems of circulation, respiration and perspiration that meet the local requirements.

The reproduction of kind firstly depends upon an animal's potency—its power to transmit its individual characteristics—to transmit such qualities and variations as in its case are pronounced—and secondly, upon its qualification to woo, win and maintain possession of one or many mates.

In view of even this brief outline of requirements, it can readily be discerned how any one or more of many variations affect the qualification of an animal to meet the conditions that confront it at every instant of its career from its conception to its disintegration. What have been here set down are but suggestions. Elaborated, they would comprise volumes. But they suffice to emphasize that existence means a struggle; that, through inheritance and its ever accompanying variations, beings are qualified or disqualified to endure that struggle and transmit their qualities to offspring.

But what is meant by what we have called the average of requirements? It can best be illustrated through some

individual species and that classical example, the giraffe, will admirably serve the purpose.

— Suppose three offspring to be born to a pair of these animals. The length of neck, for instance, of each will differ from that of each of the others and from that of either parent. So will the relative length of neck to fore legs and of fore legs to hind legs give a different quotient in each instance. This because of variation. These animals eat from trees. Their environment demands it of them. One has relatively a long neck, the second a neck of medium length, and the third a short neck. Now, as all can eat from the lower limbs, the one with long neck has the advantage in procuring food, both in quantity and quality, and, in periods of shortage in supply, could keep in condition though the others go hungry or exhaust themselves in effort to supply their wants. Other things equal, this one with long neck could easily outdo his fellows in life's struggle. If all depended on length of neck, it is evident that this one would be more likely to survive and propagate his kind than either of the others. That is, nature would select him for the more patriarchial position and consequently for the transmission of the neck of required length. And thus the length of neck might go on increasing indefinitely through the regular channels of heredity, variation and the survival of the fittest.

But other things are not equal. The long neck is an advantage in the procurement of food; but ability to procure food is but one of the list of requirements for survival of the individual or of the species. The extra long neck may be (1) disproportionate to the rest of the body, or (2) the animal must be relatively larger throughout than his fellows. Either condition may result in

attributes such as clumsiness or sluggishness—lack of that general suppleness and activity necessary to success in competition with his fellows or in escaping enemies. He has, through variation, overshot the average of all the demands that his environment imposes and goes to an early death or lives a failure as a propagator of his species.

His method of procuring food (an incident in the giraffe's environment) demanded an eye set far around on the side of his head so that he could more readily detect the approach of a foe from any direction. Such conditions as those in which he lives would, on an average, preserve and perpetuate variations toward that requirement until such an eye would become a fixed characteristic of the species. But the eye must not be too far back nor too far front. It must be, in order to gain the fullest advantage from its position, just where the conditions that forced it demand that it should be. And in like manner we might consider in detail each one of his characteristics.

Thus the environment of the giraffe has fixed an average not only for length both absolute and relative of neck, legs, body and all parts thereof, but for each and every other feature of that animal of whatever nature. And any variation from that average is to a corresponding degree a source of weakness, of unfitness to survive.

And so it is and ever has been with every plant and animal.

Nor can there occur any modification in the giraffe so long as his environment remains constant. A change in any component of that environment must change the average of conditions that he must meet. This will result in the selection for survival of variations that are

now rejected and finally result in a permanent modification. Types can be modified in no other way.*

The effect of a change in environment will depend upon its degree and the length of the period of mutation. If it be sudden and excessive, as, at least locally, often occurs from geologic upheavals or subsidence, indigenous plants and animals are at once excluded or exterminated. If the change be very slow and gradual, such as results from the long period of the formation of mountain ranges, species will either be gradually modified through selection of favorable variations, or, failing in this, they will become extinct.

The region in which the author lives was once covered by forest in which cedar abounded. It was inhabited at various periods by different species of tiger (including the saber tooth), mammoth, camels of various degrees of development, and like animals who would make a sorry plight at attempt to exist in the conditions that have obtained here for many centuries past. The change was gradual, many of the species adapting themselves to the new conditions for ages. But the Coast Range was lifting and the climatic changes were too severe for most of them. The timber retreated to the mountain tops. Some of the plants, in compliance with the new requirements, evolved into our desert vegetation. From the remnant of animal life, we have the coyote, mountain lion, wild-cat, grizzly bear, etc.

*If science finally establishes as true the mutation theory—the theory of sudden and radical modifications in species, as advocated by DeVries and his followers—its acceptance will not disturb the formulæ as herein outlined. So-called mutations, if they occur in nature, are but excessive or abnormal variations; and nature in the past has rejected and in the future will continue to reject those that are a departure from environmental requirements.

If the European had not penetrated the valley of the Mississippi until the Gulf of Mexico had been filled, relatively an unimportant geological change, he would have found it a desert of magnificent proportions. As the Gulf is the source of rainfall for the valley, its disappearance, either from surface upheaval or from sedimentary deposit, is doubtless destined to materially modify indigenous plant and animal life as well as the doings of civilized man. In ages to come, some Martian Professor Lowell or Schiaparelli may have occasion to theorize about long lines of canals that apparently stretch from northern lakes well down toward the tropics. But the effect of such a change will be very different from that produced by similar changes in the past when only natural conditions obtained. Nature's combat with man's genius in maintaining the artificial does not result in so thorough a triumph as when dealing with life in an environment in which she is supreme and unopposed.

To summarize, evolution in plant and animal life results from heredity and variation and the survival of those whose variations are advantageous in the environmental conditions that prevail at the time the variation takes place. We have not yet learned the cause of heredity or of variation. What we know is that these things are universal; and that nature selects for survival and for propagation of a species those whose variations are in the line of least departure from the average requirements of environment. This follows as certainly as that a child born with a good, healthy pair of lungs and blood to correspond, other things equal, has a better chance—is better fitted—to live than another whose lungs and blood are a hotbed for the germs of tuberculosis. The perpetuity of a species, therefore, depends upon its con-

formity to environmental requirements. Changing environment extinguishes such species as are unable to make permanent such variation as the changed conditions demand and forces others to such radical departures from old types as result in new species.

And we know more. We know that this law of evolution of life is universal. If there is life upon any other planet in this universe, its individuals must inherit their general characteristics; they vary from their progenitors; the fittest must survive; and, unless environment is absolutely staple and uniform—a condition inconceivable—new species develop.

If any are shocked by the knowledge that our species, in common with all others, has evolved from lower forms of life, let him recall that not only has the species so evolved, but he, individually, has gone through the various stages of evolution through which the various species have passed in evolving man. He, individually, began life a single protoplasmic cell. Between the time he was this simple cell and the time he was a fully developed individual, he passed through a numerous series of forms and differentiations just as did the long line of his progenitors. His ontogeny is but an epitome of phylogeny. The one is the history of the forms through which he, the individual, has evolved; the other, the history of the animal forms through which the race has passed in its evolution.

PART II

RACIAL PROGRESS

I.

UNIFORMITY OF RACIAL DEVELOPMENT

The human race began its career in a tropical jungle.* Out of an original primate type whose potentiality was the race of today, there gradually evolved an animal that walked upright, with knuckles removed from the ground. His spinal column is assuming a double curve as his body acquires an upright posture. His arms are shorter and his legs longer, more nearly straight and stronger than those of his ancestry, or of his cousins among the other primates. His body is quite generally covered with a coat of hair far in excess of that found upon his descendants of today. ** He is abandoning his arboreal habits, though he is still much a tree dweller. His feet have quite lost their former prehensile quality and his head is assuming a pivotal balance on the end of his neck. His teeth, in number, character and position are an exact duplicate of ours and also of those of the anthropoid apes. And the same is true of his every muscle and bone. His cranial capacity, especially the front or

*We must not think of this tropical jungle as necessarily being located in the same part of the earth as such things are now possible. In ages past, a tropical climate prevailed at least as far north as the Dakotas and a semi-tropical region stretchd as far as Greenland.

**There are still two races of human beings whose bodies are covered with a considerable growth of hair. The Todas (Australian) and Ainus (aborigines of Japan) are noted for the hairi-

cerebral portion, is actually and relatively larger than that of his more thoroughly arboreal cousins. He is a savage; and so will be his descendants for tens of thousands of years.

What topic should excite in us a keener interest than that of the career of the progeny of that man (for such he must be considered) through the long process of its developing institutions? Some of that progeny are even now but a slight improvement upon this original. Others still exemplify about every gradation, every status, every ethnical condition through which the race has passed from the day this savage stood at the head of the affairs of the world, to the day that gave us the men and the inheritance of the twentieth century of our era.

We now confront a great, a revolutionary truth: The human race, without exception, has passed through every gradation in what we commonly denominate progress, through every status, every ethnic condition, that lies between that of this progenitor and that which any particular part of the race may have attained. Look upon a racial specimen anywhere on earth. No matter what his institutions or his mode of life; his governmental organization or his practice of the marriage relation; his conception of the supernatural or of the hereafter, if his status is lower than yours, he represents in a general way and, to a marked degree, even in detail, a condition through which your own ancestry at some time evolved.

ness of their bodies, certain individuals among them being covered with a real fur, especially on the lower limbs." Moore: "Universal Kinship," page 19.

Authorities on embryology and ontogeny all tell us that we are hairy animals at one stage of our foetal development.

It should also be noted that the considerable growth of hair upon our forearms slants from the hand just as it did when it served to shed the rain from our progenitors as they clung to branches with hands elevated.

For the basic proof of this law of human development, the world is deeply indebted to Lewis Morgan. In his celebrated work, "Ancient Society," we have exhaustive evidence that in all branches of the great Aryan group of nations, whether it be Greek, Roman, Celt, or German, the general, if not the detailed line of development is common to each. Each passed through savagery and barbarism and developed the same succession of institutions that are common to the corresponding ethnic stages everywhere. Crossing the Atlantic, we find the American Indians, prior to their dismemberment by the white race, slowly but surely duplicating the experiences of their brothers of the historic world.

When a tribe is found that has attained, say the third status, it still retains in its institutions indisputable evidence of its having previously passed through the two lower conditions. Our own institutions of whatever nature had their roots in savagery and barbarism. They are but the results of evolution in our concepts of right relations between men; in our devices for procuring food, clothing and shelter; in our ideas regarding deity, the future life and so forth. Nothing could be more removed from right thinking than the assumption that we are in any manner exceptions to this great law, or that those whom we designate as barbarians have fallen from a higher or more perfect state in which the human race started its long career. All evidence gleaned from historic sources is an unqualified denial of such a hypothesis as fallen man.

Nations have come and gone. Peoples have attained a comparatively high degree of civilization; then, through the natural consequences of great wealth concentration,

they have internally rotted and been swept away by hordes of lower status. These in turn have builded other civilizations whose perpetuity is as wholly dependent upon their control and direction of the forces of economic origin as were those that have flourished and passed away. But outside mythology, there is not so much as a suggestion of any origin of man other than in savagery nor of any marked departure on the part of any people from the line of development common to all nations and races.

Nor would the order of development nor the nature of successive institutions be materially affected whether the progressive march began in one or more than one part of the earth. In each, the savage would be subjected to like necessities and forced to meet those necessities in a like manner. He must everywhere learn to use fire before he would have any desire for such thing as pottery; or before he could become in any sense cosmopolitan. He must learn to throw stones and use a war-club before he could construct a bow-and-arrow. He must devise stone instruments long before he can melt bronze or iron. He must learn the art of agriculture, form a centralized government and enslave his war captives before he has any desire for private or individual property in land. He must have private property to leave as an inheritance to his children before that interest in paternity is awakened that calls for an exclusive marriage relation with one or more women. He must develop instruments of destruction and a military organization that calls for the walling of his cities before any such wall will be constructed; and he must learn the art of masonry before any such protection is possible. This is the line of thought to which the remainder of this vol-

ume is devoted—thought in which the author in common with all mankind is more indebted to Lewis Morgan than to any other mortal.

The history of mankind from its beginning suggests its division into periods, each representing a distinct condition, or status, and each characterized by institutions and modes of life peculiarly its own. In this we shall follow the classification suggested in "Ancient Society," to wit: The Lower, Middle and Upper Status of Savagery; the Lower, Middle and Upper Status of Barbarism and the Status of Civilization.

Each of these periods ends and the succeeding one begins with some discovery or invention that to a marked degree affected the development of those who appropriated it. In fact, each of these discoveries, in its effect upon its exploiters, was revolutionary. Each led to new channels of activity, new modes of subsistence or of defense or of both. Consequently, each made necessary and possible a higher order of life—advanced its exploiters to a higher status—than would have been possible under the old regime.

The following table of the various periods and the events that bound each should be carefully noted. The reader who pauses to memorize it will thus gain an advantage in the study of the greater details in the life of each status that will repay him for the effort:

SAVAGERY

Lower Status—Begins when the progenitors of the race could be recognized as man, and ends with their acquisition of the use of fire.

Middle Status—Begins with the use of fire and a fish diet, and ends with the invention of the bow-and-arrow.

Upper Status—Begins with the use of the bow-and-arrow, and ends with the manufacture of pottery.

BARBARISM

Lower Status—Begins with the manufacture of pottery, and ends with (a) in Europe, the domestication of animals, (b) in America, the planting of cereals.

Middle Status—Begins in Europe, with the domestication of animals, in America, with the growing of cereals; and ends with the acquisition of the art of smelting iron.

Upper Status—Begins with the smelting of iron, and ends with the introduction of the use of an alphabet in writing.

CIVILIZATION

Begins with the use of an alphabet in writing, and extends to the present time.

II.

RELATIVE LENGTH OF PERIODS

By far the longest single period which the human race has lived is that of the lowest status of savagery. This period was spent by the truly primitive race of mankind before it had acquired a knowledge of how to use fire, or had started upon the tremendous advance that followed the acquisition of a fish diet. The other periods have successively shortened in almost geometrical ratio.

Whatever time has elapsed since man's appearance on earth, whether it be one hundred thousand or a million years, three-fifths of the entire time was spent while evolving through the three stages of savagery. The rest

of the time, with the exception of a paltry five thousand years, was consumed in the three stages of barbarism. If we assume the total period to be two hundred and fifty thousand years, and divide it into fifty parts, it may be represented by a line fifty feet long. Then each foot of that line represents five thousand years. The first thirty feet must be assigned to savagery; the next nineteen feet to barbarism; and the one remaining foot represents civilization.

Civilization may have been attained in isolated places like the valley of the Nile prior to five thousand years ago; but it was by no means general as it is now for even half that time past. The one foot in the fifty represents its full average measure. Morgan holds that the first period of savagery and the first of barbarism was each respectively longer than the other two periods of these divisions combined.

As man gained control over the forces of nature, his average rate of progress was greatly increased. The reason for this will be made clear as we study the various periods in their order. We must not, however, think of man's advancement as in any sense uniform, nor as a something accelerated. Such a discovery or invention as the bow-and-arrow would for a long period add a tremendous impetus to his attainments as its use was slowly absorbed by the crude and simple organizations that then existed. Then a period of great duration would follow before another discovery again started a long series of revolutionary effects.

For those who imagine that the use of such an instrument as the bow-and-arrow would sweep from tribe to tribe like a contagion, a study of the nature—of the conservatism—of the savage (and of the average American)

is necessary. He may with profit recall that some African and some Australian tribes have not yet attained to its use; and their ancestry is as ancient as ours. It is not that it is impossible for those tribes to evolve to the status that we have designated by the use of that instrument. They simply give the matter no consideration. They have managed to get along without it. They have other means for accomplishing the ends necessary for them to accomplish. What was good enough for their fathers is good enough for them. Like the mass of our own people, they are not moved by reason, but by necessity, by stress of circumstances. Like our savage ancestry, we do not grasp; we very slowly absorb what is thrust upon us and what it is practically impossible to resist.

III.

SAVAGERY—LOWER STATUS

In this status, we have to treat of the being that slowly emerged from an animal type and acquired such characteristics as distinguished it from all the rest of creation. These characteristics are both mental and physical. They are not so marked as now, but the germs of our present qualities are there.

If the average American or European of our time is assumed as a standard, the mentality of this being is of low order; yet he is far the superior of any other of the animal kingdom, and potentially, his superiority verges on the infinite. True, the qualities that so distinguish him are but those of the animals below him intensified; and this is equally true of the qualities that distinguish us, his descendants, from himself.

His head is small, especially in the cerebral region. His skull is thick, and doubtless his brain convolutions are not so marked as now. His forehead retreats in a low facial angle. But all the functional parts are there; all differentiations have long since been acquired through his more remote predecessors. He differs from them as we differ from him, not in the quality of function of his differentiated organs, but only in the degree of specialization of part of them. For instance, many other animals can see, hear, smell or feel as well or better than he; but they are not his equal in the adaptation of means to ends—they have not his thinking capacity, low as he is.

His stature is shorter than ours, his legs relatively weaker and not so well formed. His arms are proportionately longer and his stomach of much greater capacity. His nose is broad and flat, with openings well to the front. His chin is receding and his body much covered with hair. Especially when pressed by hunger, he is almost universally a cannibal.

Morgan gives us as the distinguishing characteristics of this status:

1. Partial tree dwellers.
2. Limited habitat.
3. Gesture language.
4. No form of marriage or of governmental organization.

It is as natural that these beings—this low order of man, or high order of anthropoid—should seek the trees for shelter and protection as that we should seek the means at our disposal. In the first place, this is with him an inherited trait that required many ages to outgrow.

In the second place, it afforded his chief means of defense against the enemies that thronged his forest habitat.

In the earlier stages of the era, he is ignorant of the use of any sort of weapon except those with which nature provided him. The first steps preliminary to his becoming a truly terrestrial animal were taken when he learned to throw stones and use a club. The revolutionary effect of such discoveries is at once apparent; and when he begins to use these weapons in conjunction with his fellows—co-operatively—the revolution is well nigh complete.

It is doubtful if our race ever made discoveries of greater consequence, or of more far-reaching effect than this use of stones and clubs. Without it, development would have been impossible. But this is true of various other discoveries, so that an attempt to compare the effects of one with another is fruitless. Each is unqualifiedly essential and we cannot recognize degrees in essentialities.

For the same reason that these primitive savages took to trees, their habitat was limited. They lacked means for defense and, likewise, means for procuring food except such as nature furnished to hand, and, consequently, means for adapting themselves to a changed environment.

They necessarily lived upon fruits, nuts, wild vegetables and such animals as they might pounce upon; or, later, such as they might stone or club into submission. But for a race so circumscribed to spread beyond a tropical forest is as inconceivable as that the gorilla should live in northern Europe. Migrations will be possible, a more cosmopolitan character will be acquired, only when means for combatting new conditions have been found. The first in that series of discoveries will be the use of

fire; and it will end this period of such tremendous duration. It will usher in what we may truly call man.

The language of this status was almost wholly communicated in gesture and facial expression. The few grunts or cries, however, were the beginnings of vocal speech. They were, in a sense, words and, of course, all verbs, as are the "words" of all lower animals. Language will be found to develop only as necessity for it and the requisite intelligence to use it develops. Investigation reveals that even now some South American tribes have not acquired the use of—or felt necessity for—more than three hundred words. These people do not think and therefore do not count beyond three. Nor in their environment and their consequent mode of life, is there any necessity for their doing so.

During this status of savagery, sex relation was that of promiscuity. There was no such thing as marriage and no recognition of kinship beyond that of mother for child until such time as the latter could care for itself. Its early maturity, a characteristic of all savages, makes this a period of short duration. Previous to their organization for co-operative effort, they probably generally paired, but with what permanency is not definitely known.

The progress of this period seems infinitesimal, but we must learn not to despise small things. The race is gradually learning a mighty lesson—learning to utilize one of nature's forces—learning to artificially modify its environment—and when that lesson is completed, its effect will be as revolutionary as any that man ever learned. They are learning how to kindle and use fire—not from a Prometheus, but from the experiences and the necessities of their daily lives.

IV.

SAVAGERY—MIDDLE STATUS

Of this status or condition of humanity which includes all peoples from the time they learn the use of fire until they invent or adopt the bow-and-arrow, as well as of all other succeeding periods, historic time, if not the races of today, furnishes exemplification. The Australians and the Polynesians, when first visited by civilized man, were found to be in this condition. They used fire, but knew not the bow-and-arrow.

The status is characterized by—

- | | |
|----------------------------------|-----------------------------------|
| 1. Use of fire. | 10. Village of clustered houses. |
| 2. Cannibalism. | 11. Organization on basis of sex. |
| 3. Fetichism. | 12. Punaluan family (Hawaiian). |
| 4. Monosyllabic language. | 13. Garments of skins. |
| 5. Consanguine family (Malayan). | 14. Cane and splint baskets. |
| 6. Rude flint instruments. | 15. Stone and bone instruments. |
| 7. War club. | |
| 8. Flint pointed spear. | |
| 9. Bark and dugout canoe. | |

The effect upon the human race of the acquisition of the use of fire was so tremendous that words seem inadequate to express it. It broke completely the narrow bounds of habitat and made the cosmopolitan man a possibility. Henceforth, he carried with him an element in his environment—a wholly artificial element—that changed his relation to the whole face of the earth. Its

most marked immediate effect lay in its provision of the requisite to a fish diet, thereby increasing to an inestimable degree man's means of subsistence.

The previous limited habitat and its restricted diet meant not only a corresponding limitation in the number of possible inhabitants, but an equal limitation to their necessities, desires and experiences—that is, to their possible development. Fortified by the use of fire and such a diet as fish, they found a ready and unfailing means of subsistence in every stream, river, pond, lake and sea. And along these they thronged, following them into regions ever before impossible of penetration.

With every advance, not only were their numbers multiplying, but as they entered the changing environments, they were constantly subjected to new experiences and forced to meet new necessities—to do new things, think new thoughts, and devise new means for expressing those thoughts. Wherever the seashore and the river led, they could follow and find subsistence, provided they could qualify to withstand the new conditions. Out of the tropical jungles, into the forests of the semi-tropical regions; on and on, as the centuries rolled by, they would penetrate the temperate zone till they would come into combat with frost and snow. The meat diet is ever increasing in necessity and the means for supplying it are as constantly multiplying.

How naturally would such devices as the war club, rude flint and stone instruments and the flint or bone-pointed spear follow in the train of these new conditions. Is there anything wonderful in that the scientists should find abundant evidence of this paleolithic (old-stone) man? Such a sequence is so entirely consistent that further discussion of such things is unnecessary.

And here let us glance at another matter of great moment. In their torrid or even semi-tropical habitat, no clothing was needed; therefore, none was worn. With migrations, came contact with more severe climate and necessity for other than nature's covering for the body. Clothing must be devised; and its original construction from the skins of animals follows as doth the night the day.

Their necessities for water navigation, as well as their marked dependence upon success as fishermen, brought to their aid the bark and dugout canoe when their rude implements had developed to a degree that made such vessels possible. And crude and simple as these were, the mighty ocean liners of today are as directly the descendants of these primitive means of navigation as are we of those who devised them.

Sufficient has now been shown to suggest the necessity for some sort of group or co-operative effort. Such attainments as have been noted would be impossible outside of organized effort. Like all things else that characterize such a people, their organization is rudimentary. It is communistic in form; and so will be all organization prior to the introduction of private property in land. But the point is, it is organized effort; and as such, it contains the vital principle of an institution typified in such enginery as the Roman legions or the American Republic.

As might be reasonably inferred, if there were no direct evidence covering the matter, organization in its original form was based upon the sex relation—was vested in the primitive form of the family. This is known as the Consanguine (common blood) family. It was founded upon the inter-marriage of a group of brothers to a group of sisters and other near relatives. The mar-

riages did not take place in pairs; they were strictly a group affair. Each man was the husband of all the women, and each woman the wife of every man in the group.

The relationship even of brother and sister was no bar to marriage among any primitive people. Nor was the practice wholly abandoned till the status of civilization was reached. We find this incestuous union to some degree in vogue among peoples in the highest status of barbarism, as, for instance, the Jews in the time of Abraham. When Europeans first visited the Hawaiian and Polynesian Islands, they found such marriages a common practice; though the regular system of the Hawaiians had passed into one of a higher order known as the Punaluan. This system differs from the Consanguine only in this, that the several husbands are not necessarily kinsmen; or, conversely, several brothers or near relatives marry several women not necessarily related to each other. But in either case, each man is the common husband to all the women and each wife the common wife of all the men.*

In such systems of marriage, a child has a distinctive mother from whom alone it claims descent, takes its name

*An elaborate form of the Punaluan family is found among the tribes of Australia. Here the members of one or more tribes are divided into at least eight groups—four of men and four of women. For instance, one classification is as follows:

Males.	Females.
1. Ippai	1. Ippata.
2. Kumbo.	2. Buta.
3. Murri.	3. Mata.
4. Kubbi.	4. Kapota.

Every Ippai is the husband of every Kapota.
 Every Kumbo is the husband of every Mata.
 Every Murri is the husband of every Buta.
 Every Kubbi is the husband of every Ippata.

—wherein a name is taken from a parent at all; and inherits property—wherein such thing may exist. Uncertainty of paternity bars all recognition of a distinctive father and each man of the group is addressed by that appellation. Grandparent, parent, child, brother and sister are the only relationships recognized among people in such status.

In the village of clustered homes is found an efficient means for making effective all co-operative effort in such matters as the procuring of food and in defense against predatory and warlike neighbors. As we follow our brief chronicle of the development of human institutions, these simple home-clusters will grow into the walled cities of the Roman Empire and the battery-guarded metropolises of the modern world.

To the weaving of cane and splint baskets attaches a paramount interest. In the first place, it is a species of manual labor—skilled labor—of no inconsiderable proportions; and therefore a medium of education that among such a people is indeed vital. Secondly, it is the beginning of vastly greater things. The art of weaving itself has its basis in this basket-making. From the weaving of canes and splints into baskets to that of vegetable

The children—

Of Ippai and Kapota are Murri and Mata.

Of Kumbo and Mata are Kubbi and Kapota.

Of Murri and Buta are Ippai and Ippata.

Of Kubbi and Ippata are Kumbo and Buta.

A distinguishing mark is worn by every male and female, so that wherever an Ippai, for instance, meets a Kapota they recognize and salute each other as husband and wife. And they are legally so related. Birth itself is the marriage ceremony. Nor would these people tolerate the marriage relation between an Ippai and any woman not a Kapota. Such conduct would be construed as fornication and would be met by condign punishment.

fibre into cloth seems but a brief step; but it took ages for the suggestion to work out to any degree of fullness. But that the one is parent to the other, there is no question. The savage that first formed warp and woof of willow wands or coarse grasses started his race on its way to the mighty combinations of looms and spindles of our twentieth century. The descent is long but unbroken. Thirdly, it is probably beyond dispute that the art that marks the termination of the savage status had its inception in this basket making. The plastering of a woven basket with mud, its conversion into a vessel and, finally, its baking into pottery in its use as a vessel is but a legitimate sequence of events.

Cannibalism was a practice of most savage peoples, but it was not universal. There is much evidence that indicates that at least many tribes were driven to the horrible practice from necessity. The fact must not be overlooked that beings in the lower conditions of the race have small means for supplying their needs and that they have no conception of means that they do not use. Hunger presses with a force that is irresistible; and they are not all savages who yield to deplorable means for its satisfaction.

Again, the effects of this practice were not all evil. Far from it. If the roasting spit awaited a captive, there certainly existed a strenuous necessity not to become a captive. Invention, that is, thought embodied in action, is born of necessity; and progress, development, mental and physical, is the progeny of quickened and embodied thought. Cannibalism, with all its repulsive features, was, in the conditions in which it flourished, an uplifting force. This force spent itself during the middle and higher conditions of barbarism, when agriculture and the

accumulation of property made the enslaving of a captive more profitable than eating him.

We now approach a subject of most momentous interest—fetichism. Although it is enumerated second in the list of characteristics of this status, it is well that its discussion should close this chapter.

We are here to deal with a thought that, let us say, conditions forced into the primitive human mind. Men thought of this matter as they did, not from choice, but because it was impossible to think otherwise. It seems inconceivable that the primitive savage should place any other interpretation upon a certain series of phenomena to which his attention was constantly directed than that which he did place upon them. And no other thought, when we consider it in conjunction with its regular progeny of ideas, that ever entered the human mind has, to such a marked degree, influenced the conduct of men. Since the hour of its inception, it and the ideas and tenets that have been born of it, have been pre-eminent to a greater or less degree, if not absolutely dominant, in the life of every human being who has passed the period of childhood. It is the belief in animism.

Animism, in the sense here used, is the belief that all things, animate and inanimate, are, in a sense, doubles: that they have a spirit form and existence independent of the material of which they are composed.

From whence sprang this thought? What were the conditions that forced it upon our savage ancestors?

We must first recall that the man with whom we are now dealing was absolutely incapable of interpreting any phenomenon; that he necessarily judged everything by appearances and took his judgments in all seriousness; that he never questioned the possibility or even the prob-

ability of anything. Nothing was seeming; all was real and the results of life. The flitting of clouds and shadows, the waving of branches, the movements of wind, the flowing of a stream, the rolling of waves, the echo, the movements of all heavenly bodies—all were due to life in things as his own movements were due to life in himself.

Of his own other self, he had constantly before him evidence that to him was absolute. First, his shadow that so constantly accompanied him as a counterpart. The thought that shadows are due to the opacity of bodies could find no lodgment in a brain like his. That would be too nearly abstract thinking—something in which such as he cannot indulge.

Second, the image of himself as well as of trees, rocks, hills and mountains—the other selves of all natural objects—that he could see down under the lake. These things were there. He could see them; and they were the shadowy doubles whose existence to him was just as real as that of the things themselves.* No other solution of such phenomena could be suggested to the savage mind. He looked into the water and saw pebbles, fish and reflections. He could not make discriminations. All were equally realities.

Third, if such experiences as have been suggested should leave any doubt in his mind that all things have a living embodiment other than the material one—have a double—a soul—are alive—his experience in dreams removed its last vestige. To the savage, what transpires in a dream is a reality. His duplicate, or soul, or other

*When we consider the importance that the savage attaches to these images, the reason for the aversion of the Indian to the camera is apparent. The photo is his other self in permanent form and the photographer carries it away—robs him of his soul.

self, actually leaves the body and wanders over the earth, the body not waking until the wanderer returns. And the evidence that with him is absolutely confirmatory that he not only has a double, but that he will live after death, is presented when in his dreams he actually meets and converses with his former friends now dead, or battles with a foe that possibly he himself has slain and eaten.

Again, during these wanderings of his other self, he meets with animals, trees, rocks and other natural objects with which he holds conversation and which, possibly while he talks with them, assume the forms of other things not uncommonly taking on the human attributes. A tree turns into his grandfather, a bear into a departed or even a living friend or foe.

These transpirations and transmutations do not surprise the savage. Nothing surprises him, because all things of whatever nature are equally possible and probable. He asks no questions, but accepts the evidence of appearances. All is as it seems. His departed ancestors and friends pass into or take lodgment in the things of earth; and these things become as sacred as the memory of his dead. In his dreams, these spirits come to his assistance in times of trouble; or to torture him in his extremities. Hence, good and evil spirits.* He has his sacred trees, his sacred rocks, his sacred animals, his sacred caves. The departed spirits he propitiates to gain

*"Once a year, and sometimes when great sickness prevails, they (the people of Nicobar) build a large canoe, and the Minloven, or priest, has the boat carried close to each house, and then, by his noise, he compels all the bad spirits to leave the dwellings and to get into the canoe; men, women and children assist him in his conjurations. The doors of the houses are then shut; the ladder is taken out (the houses are built on posts 8 or 9 feet high); the boat is then dragged along to the

their favor or appease their wrath. The fetich is an emblem of the departed one or what the worshiper conceives to be its actual chief abode.

Soon the spirits are his constant companions. Their influence is manifested in his every daily transaction. He assigns to them not only the control of his being, but control of natural phenomena as well. The earth and air are peopled with the spirits of the departed. He propitiates them with gifts of food, raiment and all else that ministers to his own comfort—the beginnings of sacrifice. He becomes a creature of faith, a blind, unreasoning and devoted worshiper. But in this status of man's development, his idolatry takes the form purely of the concrete; there are no true abstractions, such as we shall find when we encounter the higher grades of intelligence in the succeeding periods.

But whatever abstractions we may encounter in any status, they are but the legitimate and natural offspring of these semi-deified ancestors of this primitive man. Their development keeps pace with his; the gradation in either case is perfect. The germ of man's concept of the supernatural is here; and it is that concept that has exercised such immeasurable influence over the entire human race.

Note. For those who seek an exhaustive discussion of

sea shore, where it is soon carried off by the waves, with a full cargo of devils." Spencer: "Data of Sociology," page 216.

Thus in the early ages of savagery, we find, among the germs of so many other institutions and ideas that characterize our own thought and conduct, this one of the casting out of devils and of the influence of evil spirits over the destinies of men. These things always appear as foolishness when they are a part of ceremonies in which we do not directly indulge. Our glass houses, however, are very conspicuous to those disposed to look upon them.

ancestral worship and its development into higher forms of the concept of the supernatural, the author knows of nothing better than Herbert Spencer's "Principles of Sociology."

V.

SAVAGERY—UPPER STATUS

Various peoples, especially when first visited by the white race, furnish typical examples of the condition designated as the upper status of savagery. Some of them have as yet been practically undisturbed. Among the representatives of this condition are Hudson Bay tribes, and various tribes along the west coast of North America and South America.

The chief indications of the status are—

- | | |
|--------------------------|----------------------------|
| 1. Use of bow-and-arrow. | 4. A syllabic language. |
| 2. Syndyasmian family. | 5. Organization of gentes, |
| 3. Low form of element | phratries and tribes. |
| worship. | |

These characteristics are as marked an advance upon those of the middle savage status as were those of that condition upon the preceding one. And we shall find that the same is true of each succeeding characterization.

The advantages that must accrue from the use of the bow-and-arrow over the former relatively crude instruments scarcely need to be suggested. The tribe that first armed themselves with this means of destruction and defense would be masters of the competitive field. Their ability to slay an opponent armed with club or spear before he could bring his weapon into play, would certainly work havoc in the ranks of the enemy.

Another advantage embodied in this instrument was the added power that it gave to procure food and raiment. It must be kept in mind that the number of people that a given territory will support depends upon their ability to exhaust its returns from such productive sources as they know how to utilize. The United States would support but a few millions of people in the status now under discussion. That relatively few would exhaust what to them would be its entire resources. The bow-and-arrow—the power to procure food at long range—greatly extended returns from a given amount of exertion and proportionately increased productivity.

The manufacture and use of this instrument meant new, more refined and more complex lines of activity. That means an intensified training of hand and brain—new action, new thought and, as a consequence, new methods for expressing that thought. Even to as fertile and elaborate a language as ours, the mechanical devices of the last half century have added many hundreds of words. Every new institution and every revision of an old one, every new line of activity of whatever nature, created necessity for more elaborate and refined methods of expression. The language of this status has grown to the syllabic. It could not be otherwise. Language, like many other things, is born of experience and necessity.

When one recalls the sources from which language springs; the isolated habitat and the exclusiveness of the various tribes; the natural necessity that each coin its own words to express the ideas that pressed for expression, diversified languages present no anomaly; nor do they call for a Tower of Babel and supernatural interposition by way of explaining the phenomenon. That languages should grow, should increase in power to ex-

press ideas, and that there should be diversity of tongues, is not only natural, but imperative. No other condition in the light of our present knowledge, is conceivable.

The prevailing form of the family in this status is a marked advance on that of the former condition. It eliminates the repulsive consanguine element, or the union of those closely related. It is known as the Syndyasmian family. The word literally means the joining together of a pair. Here we have the germ of the monogamian family, or the "marriage to one," as now practiced by ourselves.

The syndyasmian family was more in the nature of mere pairing than of the form of monogamy that prevails in the status of civilization. It is the joining of a man and woman as mates, but the union was characteristic of the status that originated it. Cohabitation was not exclusive and separation was, at all times, optional on the part of either of the contracting parties. Descent and inheritance were, of course, through the mother. The recognition of the control of her own sex relations made her the dominant factor in the household.

Among savages there was often scarcity of women, due in large measure to infanticide, especially of female children. This cruel practice did not originate from antipathy for children, nor from lust for blood. In the first place, the savage lived a strenuous life and was practically always at war with his neighbors. Too many infants formed too great a charge for proper care during such times. Again, sustenance was difficult to procure and an undue increase in population meant famine for all. The warriors must be preserved; therefore, a part of the female children must be put out of the way. This scarcity

of women in many tribes made wife-stealing as common, at least as periods of prosperity.

The low form of element worship is but an extension of the concepts of the supernatural that characterized the savages of the middle status. As there shown, natural phenomena began to be assigned to the control of the spirits of the dead. The more powerful among them while living were alike the more powerful in the after life. To these were attributed the control of wind, wave, fire and so forth. It was but a step to the blending of the wind and the controlling ancestral spirit—to the deification of ancestors.

Around these spirits of departed chiefs is woven a mythology consistent with the mental status of its originators and that is as natural a consequence of their modes of thought and ignorance of the causes of phenomena as is conceivable. Some of the spirit chiefs reside and preside in mountains, in forests, on islands, in the sun and in the moon. If a tribe has been forced to migrate and there remain memories of an ancestral home, the dead chiefs are there and in command; and thither the spirits of his people go as the principal resort during the long hereafter. But we look in vain for evidence of pure abstractions. The primitive mind, like that of a child, is confined to the concrete. Its deities, if such they may be called, are not only anthropomorphic (man-form), but are simply the spirits of those who have lived and led his followers to success in the hunt and on the battle field.

Another institution whose development was as natural as the savage's existence is that of the priest, or sorcerer, or medicine man, or a sort of embodied trinity of them all. Ancestral spirits were of good and bad alike. They could interfere with the affairs of men and could, therefore,

work good or evil upon individuals. They were the mediums through whom diseases were brought upon man. When offended, they visited the evil doers with famine, pestilence, hurricane, earthquake, eclipse or comet. Their propitiation must be sought; and the intermediary between the living and these workers of fortune or disaster follows as effect ever follows cause. Herein lie the germs of, first, a long and varied series of deities—as long almost as the list of phenomena and as varied as the sources of pleasure or pain in tribal environments; second, of a priesthood that has dominated human thought and conduct through all succeeding ages as has no other institution ever devised by man; third, of the teachings that diseases and disasters are but the ministrations by the gods of condign punishment upon-doers or tolerators of evil.*

During this long period of the upper status of savagery, organization assumed proportions consistent with increasing necessities. In fact, the formation of gentes, phratries and tribes establishes a type of governmental organization that will yield only to the political institutions that in time are to grow out of the establishment of private property in land.

In this institution of government, we have especial confirmation of the law of common, universal lines of human development. The form of organization was es-

*Even in this our twentieth century, in certain quarters, the San Francisco disaster was attributed to the wrath of the supernatural. The matter of the geological status of the Pacific Coast region, or of the escape of Chicago, New York, Pittsburg, Paris and a few other such workers of evil seems wholly to have been overlooked. Such explanation of phenomena is but evidence of mental atavism. We are close kin to the savage and his imprint seems well nigh indelible. The absence of his qualities of mind is far from universal.

essentially identical among the early representatives of every people of which we have any history whether in the Old World or in the New. This is by no means accidental, but an evidence that like conditions—causes—produce like effects.

The word gens means kin. A gens or gentile organization, therefore, is one of those who are closely related—theoretically, of persons who are the lineal descendants of one particular ancestor. Except the few who may be adopted into it, the members of a gens trace, or at least claim, descent from one man or one woman, usually the latter.

As we have already learned, in the archaic stages of society, descent is necessarily through the woman. Accordingly, in this status, a gens contains the offspring of a woman and of her daughters and granddaughters and their daughters and so on indefinitely. With the breaking up of the communistic form of social organization and the establishment of private property in land, and its concomitant monogamic system of marriage, the gens was formed as before, except that its members were the sons, grandsons, etc., of a man.

We must recall that in the conditions of society that we are now considering, the members of a family did not scatter over the face of earth as they now do. A tribe might move by driving out its neighbors, or from being driven out by them; but migration of individual members was an impossibility. Such an attempt would end on the roasting spit. In present conditions, an organization of the gens Smith or Jones would be practically an impossibility. They would have to be gathered from the four corners of creation. But among a people in a condition of savagery or barbarism, such an organization would be

indeed feasible and natural. They would all be at hand and kinship would assert itself.

The gens, as a unit of organization, is of prime importance. Its powers were numerous and material. Among other functions, it elected or deposed its own officials—exercised the right of initiative and recall; regulated its own marriage relations; imposed obligations in matters of mutual help, defense or redress of grievances; established rules of mutual inheritance of such individual property as then existed; bestowed names; established religious rites; provided a common burial ground and a common council.

A phratry is composed of two or more gentes. The idea of kinship is carried through all the subdivisions. The men of a gens are regarded as brothers and the women as sisters. Similarly, the various gentes of a phratry are known as brother gentes and the gentes of another phratry as cousin gentes.

The phratric council had numerous functions of a civil and social nature. It had much to do in the regulation of religious ceremonies; selected competitors in tribal games—contests between the different phratries of the same tribe; constituted a sort of a court of appeals in disputes between different phratries; and held the right to confirm or veto many acts of the council of the gens.

These organizations were in many instances carried to great completeness. One of their most advanced features was the entire elimination of the incestuous marriage. In most instances, marriage between members of the same gens was forbidden and in others it was prohibited even between those of the same phratry.

A union of phratries constituted a tribe. The tribe occupy a common territory, have common interests, share

alike in adversity and in prosperity, speak the same language or dialect and live the same lives. An offense against one is equally resented by all. They claim a common origin and descent and are consequently equals in a common brotherhood.

VI.

BARBARISM—LOWER STATUS

The best representatives of this condition of peoples have been found among the Indian tribes east of the Missouri River.

Though the time spent by the various divisions of our race in evolving through this status was shorter than in any previous one, it was no doubt longer than that consumed in the two following periods combined. But that great progress was made is clearly apparent from the following list of characteristics:

1. The making of pottery.
2. Element worship, with vague recognition of the Great Spirit.
3. Tribal games.
4. Village stockade for defense.
5. Kilt, moccasin, leggins, tanned deer-skin.
6. Weaving with warp and woof—by fingers.
7. Knowledge of farinaceous foods.
8. Confederacy based on gentes, phratries and tribes.

The making of pottery is selected as the industry that marks the boundary line between savagery and barbarism; and this distinguishing feature is certainly well chosen.

This vast and varied industry, as previously intimated,

doubtless had its inception in basket making; and its invention was, in all probability, due to the genius of our barbarian or savage mothers. They being the ones who did the work "at home" would most keenly feel the need of utensils. And there would be no cause for wonderment to learn that they also invented basket making, weaving, tanning, and even the art of agriculture. They were at least long, very long, the chief practitioners in these occupations; and from all the accompanying circumstances, it is but reasonably certain that they invented them. When we consider the manner of the lives of people in these primitive conditions, the character of task assigned to each in their division of labor, it is difficult to conceive of an incentive for man's devising such things. If this is true, civilization owes a debt of gratitude to woman that it is indeed tardy in repaying.

The making of pottery implies far more than the mere baking of clay models into utensils, important as is that item. It grew in time into one of the fine arts, in fact, was apparently the source from which nearly all of them sprung. The various clays in the baked forms developed numerous shades, thus suggesting design and cultivating the sense of color and a taste for the beautiful that blending tints reveal. The modeling itself is a worthy precursor of sculpture. The degree of culture manifested in designs and in their execution, in these vessels taken from tombs or earth-deposits, is a basis for classification of the status of those who executed them. There is no more certain index of attainment either in thought or handiwork.

It is certainly interesting and inspiring to trace the lineage of the life-like forms chiseled by our great sculptors and of the myriad yards of fabric that flow from

a modern loom each through the converging lines of descent to a woven basket in the hands of a primeval savage. But, with these arts as with living beings, though they now seem separated as by infinity, yet when traced through their long lines of development are found to blend in a common type and that type may be but a worm.

The element worship and vague recognition of a Great Spirit that prevails in this status is but a consistent and logical evolution from that of more primitive conditions. In the imagination of such a people, the lives spent by the spirits of the dead are very similar to those of the living. The human attributes are carried into the life beyond. These spirits have specialized functions, take rank and exercise power and authority as when on earth. And as the forms of organization for this life assume, as we have seen, the tribal and now the confederation, the great chief becomes a mighty functionary and so does his spirit in its future abode.

The tendency to weave mythical legends about the names of heroes was even more marked among such a people than it is among us and the restraints upon it were practically nil. With no means of recording events in permanent form, the tales of adventure and prowess of noted leaders were passed from mouth to mouth with their natural grist of embellishments; and this among a people of unlimited credulity. Centralization of the functions of deity and, as a resultant, a sort of embryonic Great Spirit, is a deduction that such a society could not escape.

In the tribal games, a competing team consisted of the picked men of a phratry. The members of the various phratries were assigned places around the field of combat; and there they gathered to cheer their fellows and to

mutually share in the humiliation of defeat or the glory of victory. The conduct of this institution—one of no mean proportions among a primitive people—was very similar to that of our modern football games. The “rooters” were much in evidence and enthusiasm unrestrained.

The former village of clustered houses has now grown into one of greater proportions and is embellished by a stockade for defense. Organization and the employment of improved weapons and methods of attack called for increased precautionary means of defense. The fateful arrow and the organized effort not only forced at this early period the wooden barricade, but in centuries to come, will call for the wall of solid masonry.

Our indebtedness to the barbarians of this status is realized only when we contemplate the industries that originated with them. It is then that their lives are linked with ours in ways that command respect. Our early training has been so narrowed by ignorance, bigotry and assumed superiority that the thought of obligation to such low, wretched, God-forsaken, fallen beings is repulsive in its suggestion. But the light is breaking; the triumph of truth is tardy but sure. The chair of sociology is gaining listeners every hour as that of mythology suffers eclipse. The original discovery of the arts of tanning pelts and of weaving vegetable fibre into cloth is of more importance in the development of our race than are all the improvements in methods of doing these things that have since been devised and of which we are so boastful.

The use of farinaceous materials for food, in the forms in which unaided nature supplied them, long preceded their field cultivation. Wild oats and the parent grasses of our wheat, barley, rye, etc., were a very material factor in the sustenance of the early races. But their formal

culture—the preparation of field, sowing, covering and reaping—was an occupation inconsistent with the lives of people in these lower conditions.

The incentive to labor is its reward; and with primitive peoples, as with children, the reward must be certain and immediate. No fields will be planted nor herds collected in conditions that render returns precarious. Therefore stability of habitat and a social organization competent to repel invaders or marauders—assurance that a field will be reaped by the sower—must precede the labor of sowing. With this in mind, the long delay in the introduction of agriculture, especially in Europe, ceases to be a source of wonderment. The natural crop of farinaceous food could be gathered where found, but the cultivated field must be garnered where sown.

It is then apparent that the organization of tribes into a confederacy would go far toward securing the stability in social and governmental affairs necessary to the carrying on of either of the industries in which is imbedded the impetus for the next great advance of the race. Certain it is the confederation of tribes would result only from necessity; and when that necessity is fathomed, we find the impelling force in the means of subsistence of its members.

VII.

BARBARISM—MIDDLE STATUS

We are now verging more nearly upon historic time and find representatives of peoples in this status much more numerous both in America and in Asia. Among these are the Indians of New Mexico, Mexico and Peru;

and the tribes of the Euphrates, of India and of the steppes of Asia.

As the lines of development—always dependent on industry—are somewhat different in the two continental regions, they are better shown under two classifications. For instance, the domestication of animals that so deeply affected the racial development of Europe and that preceded the agricultural industry in the Old World, was, with the exception of the llama, entirely wanting in the New. The animals were not here to domesticate, and accordingly, the races of this continent were relatively earlier driven to agricultural pursuits. In fact, Morgan claims that the earliest impulse to the raising of cereals in the Old World was necessity for feeding the flocks and herds of animals that furnished their owners a flesh and milk diet. Be this as it may, it is certain that the people of eastern Europe and western Asia were long pastoral races before they settled down to agriculture or fruit raising.

The classification of characteristics of this status follows:

In the Old World—

1. The domestication of animals.
2. Permanent meat and milk subsistence.
3. Flint and stone instruments of high order.
4. Ornamental pottery.
5. Field agriculture.
6. Cultivation of cotton and flax.
7. Personal gods with a priesthood.
8. Human sacrifice.
9. Suspension bridges.
10. Reservoirs and irrigation canals.

11. Shuttle and embryo loom.
12. Copper ax and chisel.
13. Use of charcoal and crucible.
14. Lake dwellings on piles.
15. Cyclopean walls.
16. Dressed stone inlaid with mortar.

In America—

1. Cultivation of crops—corn, bean, squash, cocoa, cotton, pepper and tobacco.
2. Use of adobe brick and stone.
3. Irrigation of crops, using dams and canals.
4. Large tenement houses like forts.
5. Manufacture of bronze—an alloy of tin and copper.

When human organization had reached a degree of perfection that made the domestication of animals possible, man soon learned that it was easier to rear than to hunt them. They constitute the first great artificial source of subsistence for man. Through such a means, a population could subsist in numbers out of all proportion to what unaided nature would sustain. A permanent meat and milk diet was the greatest boon since the discovery of fire and the appropriation of fish. The use of the horse as a means of locomotion has a parallel only in our modern appliances of steam; and the application of animal power as a substitute for human muscle was certainly a boon of the highest order. Of these the New World was deprived and development was doubtless greatly retarded through that circumstance.

The high order of flint and stone instruments as well as the ornamental pottery reveals to us the neolithic man. In this manufacture he is gaining the skill in thought

and in handicraft, that will prepare him for entry at a later date into work in bronze and then in iron.

It was agriculture, however, that wrought the great revolution of the ages. When man learned to look to the earth itself for subsistence, and to depend most largely upon what he could by artificial means force it to yield for him, he had, excepting the mineral deposits, completed the list of appropriations of his possible means of subsistence. He is now reaching a condition in which vast, thriving populations will be possible of maintenance as never before.

But the introduction of agriculture brought in its train vastly more than increased means of subsistence. It changed the entire complexion of man's social and of his political organization. Heretofore these have been based upon persons and upon relations purely personal. Gens, phratry and so forth have been matters of kinship in which descent was usually through the female line. There has been no personal property in the land and little in anything else. The communistic element has dominated throughout all the ages. Now all must change.*

Agriculture leads directly to private property in land, an institution heretofore unthought of because useless and impossible of maintenance. And private property in land leads directly to—

First—A government based upon territory and upon property—that is, the organization of the political state with its various political subdivisions even as in our day.

Second—With such private property there comes the necessity of maintaining its integrity—of its being trans-

*The thought suggested in this and a few of the following paragraphs is somewhat elaborated in the lecture included at the close of this volume.

mitted as a family inheritance. It is here that man comes to the fore and usurps supremacy over woman. It is he who must own the land and it is to his heirs that it must pass when he has done with it. Descent must now be through the male line only. The son must succeed the father; therefore, the paternity of the son must be beyond question. The wife or wives of the man must be his and his only. The relations of men and women, the form of marriage, is as thoroughly revolutionized as is that of government. Henceforth chastity in woman demands that she bestow her favors upon one man and the slightest deviation from that line of action means her social death; while man is practically licensed to satiate his lust in polygamous marriage or unbridled free love. In short, woman was deprived of all voice in the conduct of affairs and made an economic dependent of man.

Third—For the first time in human history there now appears a system of production, of human maintenance, based upon the direct appropriation of the product of the labor of others. In its origin it assumed the form of chattel slavery.

The chase and war—the chief sources of pastime, exercise, amusement, sustenance and all manner of manifestations of the manly arts; the avenues to the satiation of vengeance, to the gratification of ambition, to the applause and approbation of fellow tribesmen—had in them the qualities that appealed to man, and about all that did appeal to him through the long past. They directed the mental trend; they shaped the ambitious career. Now the mental absorbent is property accumulation and the road to power is being paved through its ownership. But in the labor of practical agriculture there are none of the qualities of the chase or of war. No savage or barbarian

would ever require or permit another to play his part in either of the latter. But when it comes to the dust, heat, laboriousness and long hours of toil unavoidably attendant upon agricultural labor, a substitute is the one thing desirable. That substitute was found in woman and in the war captive—a consequence of the subordination of the one and the enslavement of the other.

From this time forward, chattel slavery gradually became the industrial system of the world—as gradually and as rapidly as private land holdings assumed sway. The mighty world-embracing monarchies that were then in the future are to be based upon it. Henceforth the owning and ruling class are to live from the labor of the disinherited. The system or method of exploitation will be modified as conditions demand a modification, as from chattel slave to serf and from serf to wage worker, but the result is a constant. Those who do the labor of the world must support themselves and the additional mass of owners and idlers. The development of this system will appear as we follow the course of industrial evolution.

When one considers the cultivation of cereals together with cotton and flax and this in conjunction with the use of the loom and shuttle in weaving, he finds sufficient to indicate an important phase of the slow but sure revolution that was working out in the lives of the people as they passed through this status. Habitat is becoming fixed and the communal abodes are a thing of the past. The home, as we know it, is in its incipency.

Organization among the deities is keeping pace with that among men. The power of the priesthood is centralized in a hierarchy. Their functions affect even the minutia of the daily conduct of every subject. There is no other power in human institutions that can compare

with theirs. They are the intermediaries between the living and the dead, between men and gods. The gods must be appeased and the priests must be fed. The medium of expiation was sacrifice—the surrender of that which is difficult of attainment, that which is highly prized and that which is near and dear. It is the chief function of the priest to instill into the minds of his flock the terrors of an offended and angry god. And this function they so thoroughly performed that at their bidding or even suggestion a mother would offer up her babe though she should die of grief while doing so.

These gods are always the counterpart of those in whose imagination they exist. As we have already learned, they are but an evolution of the deified ancestors of this people. The tastes and desires of the gods are in marvelous accord with those of the priesthood. And when we consider that their propitiation may demand the sacrifice of life itself and find a ready response, the offering of merely the best of the flock, or the richest fruits of the harvest is a matter of minor import—except to the priests.

Human sacrifice upon the priestly altar; the slaying of slaves or dependents or even of wives at the grave of a master; soothsaying by supposed and assumed heavenly intermediaries; and the reading of portents in human blood, are but logical outgrowths of the environing elements of such a status. All these disgusting doings are but the evolutionary products of the earlier concepts of animism; as will be Jove himself as soon as the human mind can paint and the human mass can grasp a thought consistent with such a personage.

It seems almost anomalous that the form of bridge latest developed in civilization should be the one earliest

used by man. But the iron age and the Roman viaduct are yet afar off. The weaving of willow utensils and of willow (osier) ropes, however, are close of kin; and it was upon these that their bridges were suspended. The device was simple and easily constructed. Even such a bridge as a horde of monkeys will form of their own bodies would suggest it.

The item of reservoirs and irrigation canals suggests the early stages of agriculture in rainless districts. There are two reasons for this: First—Rainless districts such as the valley of the Euphrates or Nile, and such as India, Mexico and Peru are localities provided with such natural defense as mountain ranges, sea and desert. The difficulty of access to them constitutes a material bar to pillaging enemies. Second—Crops whose maturity and yield are dependent upon rain offer rather too precarious reward to attract the barbarian. In irrigated regions all depends upon his own effort. More labor attaches to grain raising when irrigated, but the one very essential incentive to the extra exertion is there—the reward is certain. It should be noted in this connection that the earliest civilization evolved in these same localities, and, obviously, for the same reasons that agriculture at these places made its initial strides.

Peoples in this status pass through what is often denominated the Bronze Age. Bronze is an amalgam of copper and tin. These are the first metals utilized and their utilization is a prodigious advance over that of bone or stone. It is the intermediate step between the Neolithic and the Iron Ages. Efforts to obtain these metals gave us the crucible and revealed the qualities of charcoal. And though it will require thousands of years, these will

evolve into the furnace and bellows that will smelt the ferrous ores.

Out of copper and bronze were manufactured swords, spear points, shields, utensils. Men learned to work in metal and it was a lesson of profound significance, of far reaching consequences. Of these metals they manufactured the tools necessary to work in stone—to construct irrigation dams and even cyclopean walls. Without the use of iron, the tasks that those barbarians performed would tax, if it did not baffle, the ingenuity of our modern mechanics and engineers. If we knew that they had a process of tempering copper—something that we have not yet accomplished—we could more easily understand their achievements; and, likewise, that knowledge might shed some light in explanation of their long delay in learning to work in iron. That their great works were executed without the aid of this metal, we are certain; of their processes, we have not so definite evidence. Their dressed stone inlaid with mortar implies the lime kiln; and more, it implies skill and workmanship of a high order—such as will ripen to fullness in the edifices and temples of the succeeding ages.

As previously suggested, the barbarians of America were handicapped by lack of animals for domestication and that obstacle to their development was a serious one. They likewise lacked the cereals, but found a substitute in maize of such potent qualities as to leave little to regret on that score. The cultivation of this plant and the smelting of bronze by the Peruvians were the chief instrumentalities in carrying the American aborigines to the highest attainments reached on this continent—to the very dawn of the Iron Age.

VIII.

BARBARISM—UPPER STATUS

Now our interest quickens. We are approaching peoples with whom we feel somewhat acquainted. And though we must pass over some thousands of years before we can greet those whose story the historian has related from personal observation, yet the time to come is so brief compared with that which has passed that it seems as but yesterday. We are still far back of what is commonly known as ancient history; but "ancient" like other terms is relative. Its significance depends upon our basis of comparison.

Barbarians of the upper status are well represented in the Greeks of the Homeric age, the Romans before the founding of the city, the Germans at the time of Caesar's conquest, and the Jews at the time of Abraham.

There is sufficient of interest that characterizes this condition of man, and in the peoples that so strongly typify it, to fill volumes; but we must be content to select only the stronger elements in their institutions and modes of life. Among these we find—

1. The smelting of iron.
2. Fortified cities.
3. Perfection of the system of property in houses and land.
4. Popular assemblies.
5. Military democracies.
6. Iron furnaces.
7. Bellows and forge.

8. Such tools as hammer, anvil, hatchet, adz, axe, spade and sword.
9. Loom for wool and flax.
10. Hand mill for grainding grain.
11. Manufacture of wine.
12. Spear and embossed shield.
13. Metallic plate armor.
14. Wagon and chariot.
15. Ship building with planks.
16. Marble in architecture.
17. Walled cities with battlements, towers and gates.
18. Temple architecture.
19. Mythology in highest form.
20. Invention of poetry.

Says Morgan: "The want of iron tools arrested the progress of mankind in barbarism. There they would have remained to the present hour, had they failed to bridge the chasm. It seems probable that the conception of the process came but once to man. It would be a singular satisfaction could it be known to what tribe and family we are indebted for this knowledge, and with it for civilization. The Semitic family were then in advance of the Aryan, and in the lead of the human race. They gave the phonetic alphabet to mankind and it seems not unlikely the knowledge of iron as well."

The same author further contends: "The production of iron was the event of events in human experience, without a parallel and without an equal, beside which all other inventions and discoveries were inconsiderable, or at least subordinate."

Withuot any intent to minimize the effect of this wonder-working discovery, it must be held that whatever

enabled man to advance from any one status to another and the lack of which would have arrested his development in that condition, is of equal importance with anything else that ever occurred in his development. Every step was equally essential. Supremacy can be claimed for none. The slow conversion of savages into barbarians of the lowest condition and of these into those of higher status—that which mentally qualified man for the smelting of iron—cannot be classified as second in importance to anything. And it is fitting here to emphasize that when we look upon what we regard as the foolishness and weakness of the savage or barbarian, we should be mindful that he lives the only life that it is possible for him to live. He represents what was once the highest type of mankind. The utilization of a series of discoveries—a series of improved methods of obtaining subsistence—has bridged the chasm between him and us. It is in the light of such thought that we comprehend something of our dependence upon man's having done just what this despised creature does, and of his successors having accomplished something additional. This brings us to a realization of why we are what we are and how we came to be so.

No attempt will be made to discuss the various characteristics of this status in the exact order in which they are enumerated. Some of them are so interdependent that they can be discussed to best advantage simultaneously, and others need no discussion. For instance, the establishment of military democracies is a direct consequence of the perfected system of land tenures and of the methods of exploitation that resulted from it. The chief functionary of a state became the military chieftain. With his followers he conquered a territory. He took possession of the land, divided a part of it among his subor-

dinates and reduced its former owners and occupants to slavery. In other words, he established over them a system of labor exploitation that enabled him to absorb all that they could produce above the bare necessities to subsistence, thus enriching himself and his adherents. Such a system, whether in barbarism or in civilization, whether in Europe or in the United States, must be maintained by an armed force. The democracies were but nominally so. Part of the chief functionaries were elective, but the franchise was restricted to those of the owning—exploiting—class. The disinherited and exploited mass had no voice in anything and no function but to produce that others might live. The mad race for wealth and its concomitant ease, luxury and power—for the accumulation of the labor product of others—was on. The land and the slave supplied the means to that end. This was a means of subsistence unknown in the earlier ages and in this instance as in all others affecting the general mode of production of a people, their institutions were shaped accordingly. Military organization became a necessity, not only for purposes of conquest and defense against invaders, but to overawe the subordinated and to suppress internecine upheavals.

Their so-called popular assemblies were, in effect, our modern congresses. They were their legislative bodies. While the name implies that the masses had a voice in them, this idea must be received with due reservation. What was in effect a property qualification early took root; and that requirement in one form or another is still in vogue among the most highly civilized of our peoples. Late in the history of Greece and while Athens flourished under what is popularly known as a pure democracy, her qualified electors consisted of but 9000 persons in a popu-

lation of 515,000. (Ward: "Ancient Lowly," Vol. I, page 193.) Those who owned the country ruled it—a necessary condition in any form of society. The right of the disinherited to a voice in government may be recognized by even universal franchise, but it is ever nominal. The effective legislative, executive and judicial powers are vested in ownership of means for exploiting humanity.

The spear and embossed shield, together with metallic plate armor are emblematic of military organizations that called for the fortified centers and finally for the walled cities with battlements, towers and gates. Then as now, evolution along one line forced a corresponding advance in all allied institutions. And the tribe that could not maintain the pace along all lines had to perish, migrate, or assume the yoke of slavery.

The only thing comparable to the invention and adoption into use of the wagon and chariot among such a people is the modern railway among ourselves; and it is the railway, if either, that suffers by the comparison. Their new and relatively mighty mode of transportation was a logical sequence of the use of domesticated animals, as was ours to the invention of the steam engine.

The bark or dugout canoe of the savage has now evolved into the ship of planks. With the former, the savage crossed streams or small lakes; with the latter, their descendants navigated important bodies of water. And what line of action could yield a richer contribution to general knowledge than the contact with other peoples that would necessarily result from these excursions? Herein we have not only the embryo of international commerce, but of the knowledge of geography, navigation, diplomacy and naval warfare.

The displacement of copper tools and implements by

their iron successors was a slow process. Not that the advantages of the latter over the former were not apparent, but the process of iron smelting was long in its completion. From the evidence furnished by a number of furnaces found in the hillsides of Switzerland, it appears that men long knew how to construct these things before they had learned the process of their successful operation. Without appliances for supplying the necessary oxygen for combustion, the iron was difficult to obtain and deficient in quality. The Swiss furnaces were apparently fanned, the bellows being a later invention. But with the aid of this device, the process was finally wrought to thoroughness, as the quality of many ancient tools bears witness.

Supplied with iron tools after a long training in work in stone, it is but fitting that men should learn to appreciate the fine qualities of marble. Nor is prompting necessary in our search for the highest type of their handiwork in this material. The gods through the priests would dictate; the temple would absorb the supremest efforts and most enduring products. For symmetry, proportion, consistency and beauty in design in edifices—for architecture—we are doubtless deeply indebted to barbarian superstitions. Certain it is, the deities of barbaric origin figure pre-eminently in all relicts of this accomplishment.

Out of the original semi-deified ancestors there has now developed a hierarchy of gods that finds a parallel only in that of the priesthood. This is a condition common to all peoples in this status. Each had its own coterie of divinities and all are consistently endowed with the characteristics and personal attributes of those in whose imagination they were developed. Every god was

a personality—a tribesman or woman endowed with superhuman or supernatural power. The function of this hierarchy was to supervise through its priesthood the interests and the affairs of the particular tribe that created it; and the division of labor among its members was as thorough as the barbarian could conceive.

Natural phenomena, whether thunder, lightning, clouds, rain, snow, frost, wind or wave; human affairs and relations that spring from such attributes as love, hate, jealousy, or vengeance were each under control and supervision of a special, deified personage. And more, there was not a detail of phenomena nor of the doings of a human being of whatever nature in which the spirit-beings did not play a part. The supermacy of the gods was absolute; they were omnipotent and omnipresent. Through the priesthood, humanity was absolutely enslaved to these excrescences of their own imagining.

Nor is there any element of inconsistency in such conduct on the part of human beings. They possessed sufficient intelligence to think of phenomena as such. Like children, they were inquisitive as to the cause of things. In the lightning and thunder was displayed an evidence of power that certainly was superhuman. In total ignorance of its nature and source, they yet knew that somewhere there must reside a power that could produce the effects so terrible and often so disastrous. Some being not man must do these things; and the consequences of the exercise of power was an ever-present evidence of the nature and character of the being who controlled that particular phenomenon. That these people could think of the being who did these things as unlike themselves except in power is inconceivable. And even of ourselves,

how many have any conception of what they call the supernatural that is not anthropomorphic?

As already suggested, the function was an index of the character of the actor. A dispenser of lightning could not be conceived of in terms of gentility; nor the guardian of dreams as being other than a drowsy personage. The chief of the hierarchy, like the chief among men, was an exacting, jealous tyrant. Much of his time was employed in venting his wrath upon more or less serious offenders and transgressors, or in miraculously revealing his claims to authority through seers, poets and priests. In conformity to the sex relations sanctioned by certain tribes, he was sometimes a polygamist and an all around rake and free-lover. But woe to the wife upon whom there fell so much as a suspicion. Kings, military heroes, and various other personages were frequently the mythical product of some species of illicit relations between these gods and their mortal subjects, the form assumed by the celestial visitor and the manner of his advances varying according to the whim or convenience or ideas of propriety of the narrators who put the story in its classic form. In all, their gods were thoroughly human—tribal types endowed with superhuman power—barbarian semi-abstractions, who have evolved from the concrete spiritual supervisors of the savages just as has the barbarian himself from his savage ancestor.

It was with this people that human fancy and human experience were crystallized in story. Their age of reason had not yet dawned; their age of imagination was at its full! The poet had evolved and, in fruition of his endowment, he clothed alike the simple, imaginative origin of a plant, the attributes of mind, the phenomena of air, the adventures of the hero, or the translation of a

demi-god to the heavens in immortal measures. However profound has been the influence of poetry upon the Caucasian race, Erato and Calliope are of barbaric origin.

The classic quality of the myths of this status lies not alone in the manner of their relation but in their conformity to human experiences. When Paris is commissioned to bestow the apple of discord upon the goddess who most merited the gift, with obvious consistency, he presented it to the Queen of Love. When Cupid failed to develop—remained always a child—a goddess suggested as a remedy for his infirmity that a brother should be born. The stripling at once waxed strong and active. The Greek had fathomed one great source of the world's grief and trouble; and the effect of a rival in the affairs of the heart.

Recognizing in fire the greatest boon ever bestowed upon man—a source of power that made men as gods—it was conceived as of celestial origin and its acceptance by mortals as presumptuous. In effort to mete out condign punishment, the gods conspired, created woman, endower her with beauty, persuasive power, craftiness and curiosity and bestowed her upon man. He unwittingly accepted the gift and forthwith the box of obnoxious articles opened and Pandora and pandimonium reigned. With the Greek as with the Jew in the barbarous status, the sorrows of man are directly traceable to the introduction of woman among created things.

The Jupiter (Jove) of the Greek and the Jehovah of the Jew each became enangered over the shortcomings of his creations and concluded to drawn them—the one sparing two devout souls and the other eight. The Prometheus of the Greek, a nephew of Jupiter, was the unfailing friend of man. It was he who stole fire from heaven and

bestowed this source of life upon mortals. For his advocacy of the cause of humanity he was bound upon a rocky cliff that the eagles might batten upon his liver. He is the "symbol of magnanimous endurance of unmerited suffering, and strength of will resisting oppression"—the Christ of the early barbarian.

The story of Ixion bound forever to a revolving wheel in hell for an attempt to embrace Juno is a reminder of the respect and reverence that is due the gods and of man's subordination to the immortals. In the tale of Cupid and Psyche is beautifully portrayed the baleful consequences of envy, jealousy and suspicion.

To the Greek barbarian, Mount Olympus was the throne of the gods and the center of the universe. Their Elysian fields lay to the eastward, and to this heaven mortals especially favored of the gods were often transported without suffering death. There they enjoyed immortality and eternal bliss.

The gods of the northern tribes dwelt in palaces of gold and silver in a region reached by traversing the bridge of the rainbow. They battled with frost and snow, drove back the winter and ushered in the joyous spring and summer. Like the gods of all other peoples, they were types of their creators. The souls of those who died in battle were the only ones permitted to enter the heavenly mansions. There they enjoyed the eternal privilege of a daily feast and a daily fight.

But the subject matter of mythology is too elaborate to be treated by more than a few suggestions in a work like this. It is all an extensive series of tales that are in perfect accord with the lives, the character, the ideas of the people and the ignorance of the nature of phenomena that inspired them. It is well, however, to note that,

through the agency of priests, poets, seers and oracles, implicit, blind and unreasoning belief in these myths was as deeply instilled into the souls of subjects as it is possible to implant a religious conception. They constituted a faith for which the devotee would die as willingly as ever martyr met his doom. To question the reality, or power, or function of the gods was a sacrilege that merited and met the severest penalties that human ingenuity could devise. The doubter, the infidel, or the atheist was, to the barbarian, the horror of horrors. And when we contemplate the mental darkness in which humanity in such a status is enshrouded—that with them phenomena can be accounted for only as the doings of the gods—nothing in human history is more consistent than their beliefs and the tenacity with which they clung to them.

If any are disposed to think it strange that human beings would so thoroughly enslave themselves to what we all now know to be but the creations of a vivid imagination, let them recall that five thousands of years of what we call civilization has fallen far short of removing this strange propensity in man's mental makeup. We have traced the development of this idea of gods and, in the conditions that have ever obtained, the conclusions ever drawn by man were the only ones possible for him to conceive. And it is likewise apparent that the only force that will ever liberate the human mind from the thralldom into which it was so naturally and irresistibly plunged is enlightenment as to the nature and causes of phenomena. Lightning will cease to be a display of the power or anger of a deity only when the Leyden jar has revealed the manner of its production; and even then only to those who possess sufficient knowledge and mental acumen to comprehend the revelations of that instrument.

The regrettable feature of this enslavement to superstition and myth is the intolerance that of necessity is its concomitant. The priest is the legitimate mouthpiece of the deity and consequently the embodiment of authority; and with authority thus vested, progress is all but fatally handicapped. Experimentation, or a search for the nature and cause of things, is a direct invasion of the realm of the gods—is evidence absolute of infidelity and an attempt to overthrow priestly power. It is heretical and atheistic. To have demonstrated that Jupiter from Olympus did not control the thunder and lightning as a direct manifestation of his power or displeasure, would have practically eliminated the function of the Grecian priesthood—and their mode of securing a livelihood as well. It would have rent assunder the entire structure of the religious institutions of that people. Consequently, upon such a demonstrator, heaven-ordained authority would have wreaked a sublime vengeance. Such a contraction of the functions of deity will be tolerated only when the priesthood lose power to suppress it; and that will be ages after the Greeks are no more.

The fact that the entire religious system of this people was constructed out of myth and falsehood did not in the least detract from its influence nor from the earnestness of the devotion of its adherents. They believed it; and in that blind belief they found surcease of their sorrows. It satisfied the longings of the soul. Through its rituals and ceremonies they communed with the gods and basked in the joyous anticipation of reward for fidelity both here and hereafter. A few scientific experiments intelligently interpreted would have shattered it to the last shred and established truth in place of its absurdities. But to few indeed would such a consummation have been

acceptable. To the masses the conclusions of the scientists would have been incomprehensible and destructive of their hearts' treasures and their souls' sources of consolation.

These people would argue—wherein they suffered themselves to risk even disputation—that in fidelity to their faith they took no chances. If the teachings of their creed (that to us seems such nonsense) were true, they were safe; if false, no harm is done. This position is as false as their belief in Jupiter and Olympus or Odin and his Hall of Valhalla; and more, it is an insidious worker of evil. It closed their ears and steeled their hearts against all possible invasion of truth. Truth and falsity are incompatible; where falsehood reigns, truth is excluded. In creeds, toleration means decay; therefore, to the adherents of the creed, the teaching of adverse ideas is a dangerous, ruinous heresy that damns souls both here and throughout eternity. It then follows that a seeker after, or a promulgator of truth is a fiend incarnate. It is in this spirit of intolerance, this stultification of effort to establish the relation of cause and effect in phenomena that lies the devilishness of the creed. Maintainers of the faith—the priesthood and their mass of misguided followers—have ever formed the phalanx through which truth has had to force its way to liberty. It has ever been the organized mythologists that have challenged the scientists and condemned acceptance of the deductions from investigation and experiment. And this for the obvious reason that those deductions were destructive of the mythical elements of the creed and, also of the power of the priesthood.

Regrettable as this conflict has ever been, for man to escape it was impossible. From the beginning of his career, it is obvious that he was doomed to be the slave of

his erroneous interpretation of the causes of phenomena. And out of those false conceptions of relations has sprung all the myths, and all the creeds and institutions born of them.

The invention and perfection of poetry by the barbarians of this status lays us under tribute to a degree of which relatively few have any comprehension. And this seems the more wonderful when we recall that this art was carried to its highest state of perfection long before men had devised a means for representing sounds by characters—for writing words. Poems were composed and memorized in their composition; but no record was made of them. At an early date precursive bards sang into the hearts of the barbarians "the chant, the paean, the choral song and the merry roundelay of the singing girls and vintagers." But it remained "for the deeds of the heroes of a nation to furnish the material of a loftier strain, and Scio's rocky isle to furnish the singer."

The songs of that bard, known to us as Homer, we have preserved in two incomparable epics, the Iliad and Odyssey. They were chanted in the ears of old Greece; and, voluminous as they are, were memorized by constant repetition from generation to generation for several hundred years. Finally, under the reign of Pisistratus, a cousin and contemporary of Solon, in the sixth century B. C., they were reduced to writing.*

In these Greek compositions, as in those of the barbarian everywhere, mythology permeates every paragraph. The gods and goddesses are the constant companions and protectors of every hero in his every effort and the inspiration of the commanding chief. They con-

*The Greeks had used an alphabet in writing prior to this time, but only in business affairs, not in literary composition.

stantly present themselves in moments of danger and even become participants in times of peril. The results of battle, whether it be of personal combat or of general attack, are attributed to them. Their assistance is implored upon every occasion and defeat is but evidence of offended deity.

It is this saturation of the early records of our race with the mythological—the attributing of everything worthy of comment to the supernatural—that renders these records almost worthless as history. It took centuries of what we call civilization to excite in the mind of man any interest in anything purely natural. A relation of events as they occurred, a record in which one or more gods did not figure as the most conspicuous personage, in other words, a recording of truth, was not worth the effort. No matter how great or how trivial, a story that omitted angels, gods, ghosts, spirits, witches, fairies, oracles and other creatures of the imagination was not worth the telling. While the human mind is thus under sway of a priesthood; while utterly ignorant of truth and barred even from consideration of things as they really are, the arts of poetry, painting, architecture, sculpture and oratory may develop; but history and science—the relation of and the search for cause and effect—are prostituted to the mythical, the nonsensical, the false.

IX.

CIVILIZATION

With any people, the status of civilization dates from the time they learn to represent sounds by written characters—to use an alphabet. This is the status of our race

of which we have at least a partial record upon tablets of stone, leaves of papyrus and parchment, and on the printed page.

With very few exceptions, this status includes what may be designated as the world's historic personages. This is not because persons who merit much distinction were not produced in former ages, but solely to the lack of records of meritorious achievements. It would indeed be gratifying to know the history of the person or even of the tribe chiefly instrumental in giving to man any one of a number of revolutionary implements, ideas, or systems of organization. The claim of each to our approbation and applause, or even our veneration, would be second to none in the halls of fame.

The status has, in the main, been characterized by—

1. The invention of an alphabet.
2. The development of international commerce.
3. The perfecting of the arts of architecture, sculpture, painting and the drama.
4. Elementary discoveries and theories in science.
5. Naval warfare.
6. Rise and decline of world monarchies based on slavery.
7. The displacing of polytheism by tritheism and monotheism.
8. The displacing of the chattel slave system by the feudal system of production.
9. The rise of papal authority and religious fanaticism.
10. The practical obliteration of learning.
11. The revival of learning.
12. The decline of the power of the priesthood.
13. Discoveries, inventions and the advancement of science.

14. Decline of the feudal system.
15. Rise of the spirit of democracy.
16. The displacing of the feudal system of production by the wage system.
17. Rise of the modern great powers.
18. Inventions.
19. The triumph of science.
20. The concentration of wealth ownership.
21. Gigantic Navies.
22. The spread of the teachings of Socialism.

The invention of an alphabet placed in man's hands an instrument of incalculable potency. The means of recording ideas in permanent form changed the accumulation and transmission of knowledge from an effort of memory to one of muscle and finally to the operation of machinery. Though of feeble and obscure origin, this invention has made it possible to bring the millions of earth into hourly communication with each other and into communion with the best thought of every great mind of the civilized era.

It is fitting and consistent that this method of making records should have its beginning with the Phoenicians. This Semitic people, with its colonies around the shores of the Mediterranean, were the first to engage in what we know as international commerce. They carried on trade with every tribe from the British Isles to Damascus. In this they were brought into contact with many different peoples and all manner of customs and usages. Their necessities required them to become conversant, to a greater or less degree, with many languages and with all such signs and symbols as the various tribes employed to indicate ideas. That out of such experiences and business requirements, such opportunity for testing the rela-

tive merits of the usages of different peoples, there should evolve a means for making rapid records, is but a logical sequence of events. The alphabet was devised for business, not for literary purposes; and such purposes it long and solely served even among the intellectual Greeks. The inventors taught the nations international trade, but left no literature.

International commerce can be definitely traced at least 3,000 years B. C. At that time the nations of southern and western Asia, in the Tigris-Euphrates valley, Arabia, Syria and Persia, were carrying on quite extensive trade. With the Greeks, it began about 600 B. C. But as already intimated, the Phoenicians were the early traders of consequence, and the early manufacturers as well. They gathered raw material from the other nations, converted in into finished products and sold them wherever trade could be sustained. They were likewise the first sea-faring nation and the first explorers. They were well on the way to become a world power, but in their conflict for supremacy with Rome, their influence was annihilated. From these small beginnings, international commerce slowly developed until it took high rank among the factors that determined the making and the destroying of nations—a factor that modern capitalism has crowned with supremacy. Channels of trade became the determining condition in the relative growth and power of cities and any circumstance that called for a change of route spelled decay for populous centers thus deserted. Witness, for instance, the disastrous effects upon southern Europe when a route to India was found in the water way around Africa, in A. D. 1498.

The taste for art that the Greek inherited from his barbarous ancestors rapidly ripened to fullness in the

civilized status. Art and literature merged on perfection in the Periclean Age in the fifth century B. C. It was then, and under the master hand of Phideas, that the Greek's ambition to picture his gods in stone, ivory and gold was sated.

In the Parthenon at Athens, they constructed a statue of Minerva, their war goddess, forty feet high; and in the temple of Zeus at Olympia, they placed one of Jupiter sixty feet in height. The face, feet and body were of ivory; the eyes were brilliant jewels and the hair of pure gold. Their temples were as magnificent as their statuary; and their architecture, types for the ages to follow.

The statuary of Praxitiles and Lysippus are models for all mankind. Succeeding artists have been in a great degree but copyists. Likewise the paintings of this people were masterpieces as yet unexcelled by any production of our race. Her poets were worthy successors of Homer and models for even a Shakespeare.

For the earliest attempts at the promulgation of science, we must again turn to the Greeks. In many respects this people for centuries stood alone among the nations of earth. Could they have held their high place, or even passed their attainments on to a worthy successor, the world might long since have reached a status far in advance of what we enjoy. But such qualities cannot be superimposed upon inferior minds. Greece was as a wave crest in a seething sea of humanity. She was destined to be swept before the onrushing flood of the restless Romans. She illumined the world through her genius. The light was practically extinguished for more than a thousand years and then but feebly rekindled.

The most commendable feature of the early efforts at science is that it is at least an attempt to assign natural

causes for occurrences. It is evidence that a few of the thoughtful have partially divorced themselves from the old mythology and have begun to reason about the relations of phenomena. Though their efforts were, as Spencer says, "but vague adumbrations of the truth," they were a mighty advance on the thought of all former ages.

This revolutionary work began about the time of the application of the alphabet to literary composition—between 500 and 600 B. C. It was crude and far fetched, but we must be mindful that its founders had the work of no predecessors to build upon and that they knew nothing of experimental—inductive—methods. They speculated about phenomena without subjecting their ideas and conclusions to actual tests. For instance, from the evident essentiality of water to life, Thales, the first of the long series of more or less renowned philosophers, held that water is "the principle of all things." He taught that all life emanated from water. Likewise, Professor Loeb now tells us that life had its origin in water, but not that plants and animals are simply made out of water. The ideas of Thales were speculations based upon very superficial observation of the relation of that substance to the composition and the well being of living things; the conclusions of Loeb are drawn from a score of years of his own intelligent observation and experimentation, fortified by a century of the trained labor of his predecessors, and by a knowledge of chemistry—of the nature and composition of matter—that has been developing for generations and of which Thales had not the faintest conception.

But Thales drew a few thoughtful souls from the ancient ruts. He gave impetus to new lines of thought

that shook the throne of Jupiter in every mind that they penetrated. He set men to thinking about phenomena as they had never thought before. Among other heresies, he taught that the earth is not flat, but is a sphere. Truly the light was breaking.

A contemporary of Thales, Anaximander, held that the cause of all things "is neither water nor any other of what is now called the elements, but a substance different from them which is infinite, from which arises all the heavens and the worlds within them." "Man," he said, "is, in the beginning, like a fish." Unless he had made examination of fetuses, this was but a sort of lucky guess; but it indicates that the minds of at least a few Greeks were being stirred to the depths.

As might be presumed, due caution was necessary in the promulgation of such ideas. The power of the priesthood and the old myths was dominant. A few might covertly hold and esoterically teach such doctrine as did Copernicus more than 2000 years later, but the masses were the sons of the barbarians and the religion of their fathers was good enough for them. More than a century after Anaximander's time, the greatest philosopher of the age, Socrates, met death at the hands of the mythologists for his too public and vehement proclamation of the unity of Creative Power. He was executed as an atheist and a corrupter of the young. While Socrates was still a youth, Anaxagoras was condemned to death for teaching the oneness of deity. The sentence, however, through the intercession of the powerful Pericles, was mercifully changed to banishment. Among his other offenses, he was the first (at least of Europeans) to determine the cause of eclipses and of the illumination of the moon.

Mythology changes its form; but not its attitude toward advanced thought.

Premanides, about 550 B. C., contended that the universe is permanent; that it did not come out of nothing, nor could it pass into nothing. In his teachings, we have a guess at the theory of the permanency of matter and force that more than 2000 years later was proven and formulated by Lavoisier and his successors.

In the century following the death of Socrates, lived the great Aristotle—the myriad minded. His works constitute a cyclopedia of the knowledge of his time, and a vast deal of that knowledge resulted from his own marvelous intellect and capacity for work. He is, in at least part of his productions, the nearest approach to an inductive reasoner that the world produced prior to the thirteenth century of our era. For nearly 2000 years his writings constituted the text books on science for all Europe. He perfected the science of logic and laid the foundation of the study of natural history, especially zoology. Ethics and government he treated with marked ability. It is, and very naturally, in the matters touching the purely inductive sciences of physics and chemistry—in dealing with the mass of phenomena that these subjects embrace—that he signally fails. The age of experimentation required to demonstrate the laws therein involved is yet to come—when Greece and Rome have been, but are not.

The fact that one man could furnish the texts on so many subjects for such a period of time is in itself evidence of the impoverished mental condition of the peoples that succeeded the Greeks as the chief actors in the world's drama—an impoverishment that extended at least to all things pertaining to science. The Greeks had laid a foundation, but the world waited long for others to rear

any sort of structure upon it. The leaders of Hellenic thought had well nigh abandoned the gods, but the rest of humanity were long enthralled.

Naval fleets, first organized by the Phoenicians, Persians and Greeks, date at least as far back as 700 B. C. The vessels were navigated by oarsmen and sails and the battles were fought by ramming and sinking the enemy's ships and by hand to hand combat upon the decks. Primitive, indeed, was all this, but an incomparable advance upon anything that the savage or barbarian had ever known. For the real significance of institutions, one must look both ways from the viewpoint—both backward and forward—to the dugout and to the dreadnaught.

The succession of ancient empires presents a panorama whose sublimity none but the historian can fully appreciate. Egypt, Babylonia, Assyria, Persia, Greece and Rome, in turn, come upon the scene. Each enacts its part and passes on.

We have seen how slavery came into human institutions along with the practice of agriculture and the private tenure of land; how the tribal organization was transformed into the political state; and how the political state, in the upper status of barbarism, took on the form of the military democracy. We have further seen how the masses of humanity multiplied as they acquired additional means for subsistence. Out of these conditions and institutions, the world-embracing monarchies evolved. Land ownership and slavery made them possible. The land was the natural and original source of the requisite to their building, and the slave did the work necessary to supply that requisite. **The slave produced more than his subsistence**; and it was this "more," this surplus product of slave labor, that made possible those monarchies. It

was this product exploited from the labor of the slave that built and walled their mighty cities. It was this surplus product from the slave's toil that left the freemen opportunity to recruit armies—to become soldiers; and this same surplus armed, equipped, fed and clothed them when recruited.

From the beginning of our study, the interdependence of human institutions and the mode of procuring a livelihood has been at all times apparent; but in no instance has it been more strikingly portrayed than in this making of the old monarchies and the institutions that characterize them. Their absolute dependence upon the exploited slave is too apparent to escape even the most superficial observer. As soon as human institutions had advanced to a degree that made it possible for a part of the people to provide for themselves and for the rest as well—when the exploitation of labor became a factor in the system of production—riches for the few, systems of taxation, standing armies of non-producers—all the requisites to foreign conquest and to the building of vast states—were possible and at hand. And they were utilized to the last extremity. Those peoples whose territory possessed the richest natural resources and who had the capacity to develop them came rapidly to the front as conquerors.

A conquered territory supplied plunder for the conquerors and slaves or tribute or both for the country of the invading army. Foreign acquisitions were usually administered by an appointed governor—and an army to support his decrees. His power to prey upon the conquered was, of course, limited by the capacity of his subjects to supply material for his rapacity, but by little else. When history tells us that Caesar was a model executive as governor of Spain, and yet, in nine years, he

liquidated five millions of dollars of his personal debts and, in addition, enriched himself and his soldiers, we need not investigate any statutes prescribing the duties of such a functionary. Many of the common people—of those who knew how to be of service in production—were enslaved. But as it was far more profitable to hold the rich and the royalty for ransom than to put them to work, they were almost universally so held. An acquired territory was exploited through a system of taxation and an annual tribute to the conquerors that, in modern parlance, was “all that the traffic would bear.” It therefore became, in many particulars, a profitable acquisition.

It is now quite evident why these various nations rose to power; but why did they fall? When one of them had once gained such a degree of supremacy as various of them did gain, why did it not hold it? Their elements of strength are patent; and it is equally apparent that they must have incorporated also elements of weakness. What were they?

First, there was lack of homogeneity among the people of such an empire, lack of unity of purpose among its members. Outside the original territory, it was a conglomeration of provinces. The conquered states were never content to remain as tributaries, were much of the time in open rebellion and were held in subjection only by an armed force.

Second, the constant succession of foreign wars of conquest and re-conquest dissipated the strength of the empire by sacrifice of its strongest manhood on march, in camp and on field. The original stock became degraded, just as our constant sacrifice of the largest and best and breeding from the poorest would degrade our domestic animals.

Third, the concentration of wealth-ownership was chiefest among the causes of imperial dissolution. This concentration was due in largest measure to the plundering of the public domain under the corrupt practices that universally crept into patrician rule and to the looting of provinces at the hand of governors.

In the old systems of organizations, as in those that evolved from them, the land originally (at least theoretically) belonged to the whole people—in the first instance (actually) to the tribe; in the second, to the state. The difference lies in this: the old order did not recognize private property in the land; the new order did. Though private ownership became the prevailing tenure, yet in the formation of the original states, much land was reserved as public domain. Through patrician corruption this was acquired by the ruling rich, much as many millions of acres of our own America have been seized through connivance with venal officials, through purchased legislation, or the coercive power of wealth. Whether it be Egypt, Babylon, or Rome, during her decline and fall, an insignificant fraction of the population possessed about all that was worth owning.

Again, the direct exploitation of the labor of the slaves was a source of tremendous income for the masters. But this was a secondary element in the building of the most tremendous fortunes of the old nations. The primitive means of production then in vogue did not permit of any such degree of labor exploitation as obtains in our modern institutions.

The condition of concentrated wealth-ownership is inherently destructive. It corrupted and demoralized the patrician class. It destroyed the element originally typi-

fied by the small farmer* and craftsmen—the so-called middle class—the real source of power, the reliance of every nation. It converted the population into a relatively few inordinately rich, and a great mass of slaves and dependents—two classes out of which soldiers are not made—two classes in whose brain patriotism that is convertible into action does not thrive. Rome, for instance, was doomed to rapid disintegration when her legions had to be recruited from those whose ambition was sated by bread and circuses. The old empires rotted internally, as must every nation that permits a few of her citizens to acquire possession of her sources of subsistence. It is then that a feast of Belshazzar, a drunken orgy of an Antony and Cleopatra, or the sale of what should be positions of honor and trust reveal the legitimate harvest from the seed she has sown.

The first three centuries of our era were years of propaganda of a code of ethics and a religion that originally was a total departure from the old systems. While it was ostensibly an outgrowth of the system that had been long practiced by the Hebrews, it was in many respects as much at variance with the orthodox standards of that people as with those of any other. It had its origin in the teachings and philosophy of Jesus of Nazareth.

This man is reputed to have scoffed at the prevalent hypocrisy, idolatry and corruption of his day. He attacked the old codes of morality, the old forms and ceremonies that had long since degenerated into mere forms and ceremonies, and the hierarchy of heathen gods. He

*Regulus, when called to command in the war against Carthage, grieved that his absence would necessitate neglecting the cultivation of his farm of about seven acres. The story of Cincinnatus is familiar to all.

taught love of all mankind, a kinship of the races, a passive submission or total non-resistance to personal affronts, a patient tolerance for the erring, and that pure works alone are evidence of a pure life. Polytheism was rejected and in his teachings there appears as well defined an idea of the unity of supreme and universal power as had yet been presented within the territory subject to Rome.

His philosophy was revolutionary and consequently repulsive to those in authority and to the ignorant mob swayed by the politicians and priestly powers. The fate of the apostle of advanced thought awaited him. He was executed in the barbarous manner then held to be befitting his crime, by crucifixion; as were criminals of all grades from petty thieves to those convicted of treason.

This teacher and philosopher, like Buddah and Socrates, reduced nothing to writing. That function fell to the lot of his followers and much that has come to us was not formulated until one or more centuries had passed. In some instances even the authors are unknown, but doubtless the writings present the interpretation of his teachings that prevailed, at least among one faction of adherents, at the time of their composition. These interpretations, especially if we consider along with those held as orthodox, the apocryphal works* vary to a marked degree with time and place. And when we consider the restricted means for communication that then obtained and the natural tendency of the illiterate or the superstitious to exaggerate and misconceive and their

*There were more than thirty of these works (of the New Testament apocrypha) written from 200 to 600 A. D. Among many other things, they tell in minutia of the life and doing of Jesus and the Holy Family, relating the stories that were current about the miracles that he performed even as a child.

incompetency as witnesses, there is nothing surprising in these various constructions and representations.

For the records of the doings and teachings of such a personage to escape the miraculous and the supernatural—the mythological—is inconceivable. In fact, as the study of our race makes apparent, to have omitted this element, or even to have subordinated it, would have been fatal to efforts at propaganda. Such an omission would have robbed it of all interest. With the human mind in the status that it was then in, the story that merely presented such a personage as a philosopher and expounder of higher modes of life, void of miraculous origin and miraculous evidence of power and authority, would not be worth relating. Except in the ear of the few learned and philosophically inclined, it would command no listeners. It would have failed utterly among an ignorant mass that demanded even of their leaders in labor wars evidence of power to work miracles.* Nor among such a people and in the conditions then and ever before prevalent, could the story of a teacher of purity and righteousness in this life and happiness in the life to come pass from man to man and from generation to generation and not become impregnated with myth. Mankind was absolutely under sway of the mysterious, the mythical. The natural had no charms. Regardless of the real teachings of the real personage, there is nothing abnormal in all the mythology woven into the records that have come to us. With all this eliminated, they contain sufficient of truth and ethic purity to commend them to an enlightened humanity. They stand as a beacon light on a rock-bound coast.

*See Ward: "Ancient Lowly," vol. I, chapters vii, ix, and xi.

In its earlier form, as the propaganda of the new faith gained adherents it spelled the downfall of polytheism and the establishment in its stead of at least a form of tritheism somewhat similar to that that had long prevailed among the more intellectual of the Hindoos and Egyptians.* The tritheistic element resulted, of course, from the injection of the myth of immaculate conception into the story of the birth of Jesus. This was a claim on the part of his followers that would in no sense be regarded as impossible or even improbable. And as for the performance of miracles, that was a too common attribute of distinguished personages to excite more than due interest. It was in no sense a test of the credulity of a would-be convert or of the credibility of a narrative. All such claims would then stand, especially with the masses, as a natural part of the regular order of things.**

The various interpretations of both the real and the mythical in the life of Jesus led to as bitter strife as any in which men ever engaged. From 300 to 335 were years memorable in ecclesiastical history. Arius and Eusebius, backed by the authority of the strongest writers of the Apochryphal works, then held as authoritative, led the forces who denied that Jesus was as God from the beginning; and Alexander and Athanasius headed the faction that clung to the literal construction of immaculate conception. It was during this turmoil of the warring

*See James Freeman Clark: "Ten Great Religions."

**Even Gregory the Great, 600 years after this time, "was a sincere believer in miracles, ghosts, and the resurrection of many persons from the grave." Draper: "Intellectual Development of Europe," Vol. I., page 357. If this was the mental condition even among leaders of thought, what can we expect from the masses?

factions of Alexandria and Constantinople that Constantine, a most unscrupulous politician, came to the throne. His path had been thorny. He had warred with five rivals. He needed support.

The Christians now constituted a very strong party in the empire and Constantine, to gain their favor, granted them concessions and finally made theirs the state religion. Even this act of a murderer needed to be sanctified by a myth in order to give it proper tone and effectiveness; hence the story of the cross in the heavens. It must, however, be admitted that a man in his state of mind would be liable to see almost anything. In 324, he murdered his own wife and his brilliant son, Crispus, and the next year presided at the great Nicene Council that determined the tenets of orthodox Christianity.

But the Man of Galilee would have been a stranger among those who paraded as his followers at this time. A priestly hierarchy was enthroned whose head posed as the vicegerent of God himself. In its development, as an expediency to gain adherents, this priesthood had literally grafted Christianity onto paganism. It had dressed itself in imposing robes and erected elaborate altars decorated with lights and images. For the heathen coterie of gods, it offered a triumvirate of Father, Son and Holy Ghost, adding Saint Peter and a few canonized personages. As a substitute for the goddesses, it proffered the Virgin Mary as the veritable Mother of God and a few saintly women whose chief function in heaven is to intercede with those in authority on behalf of sinners, and the chief function of whose mortal remains is to heal the bodily ills of humanity, inspire them to stronger evidence of faith and to more liberal contributions to the treasury.

Its array of worshipful fetiches and images might well excite the envy of a savage.*

- The monastic system, patterned after that of the older eastern nations, filled the Christian world with a swarm of mendicant friars and priests that found their sexual counterpart in the nunneries. The priesthood declared their chief hierarch infallible, the lineal apostolic successor of Jesus (held to be a form of God), with power to bind on earth and in heaven. It vested him with the power of excommunication—power to damn a heretic to everlasting hell.**

Europe simply went mad in religious and un-Christlike fanaticism. In the name of the teacher and philosopher of Zazareth, ambition was absorbed in asceticism and self-degradation. Superstition paraded the nails from the original cross in quantity sufficient to crucify a company and even (loathsome as it is to relate) a bottle of milk from the breast of the Virgin. The light of knowledge was extinguished. The papacy put it under ban and finally Gregory the Great even destroyed the Palatine library. "Ignorance is the mother of devotion," is the

*"Under Gregory was sanctioned that mythologic Christianity destined to be the religion of Europe for many subsequent centuries, and which adopted the adoration of the Virgin by images and pictures; the efficacy of the remains of martyrs and relics; stupendous miracles wrought at the shrines of saints; the perpetual intervention of angels and devils in sublunary affairs; the truth of legends far surpassing in romantic improbability the stories of Greek mythology; the localization of heaven a few miles above the air and of hell in the bowels of the earth with its portal in the crater of Liparti." Draper: "Intellectual Development of Europe," Vol. I., page 357.

**The terror of this instrument is well illustrated in the case of King Henry IV. of Germany who stood at the gate of the papal palace for three days, bareheaded and barefooted, in the snow, in order to gain release from the awful curse of excommunication.

precept upon which they acted. Even infants who died before birth were consigned to the tortures of hell because some priest had not sprinkled water upon them while they still lived; and this in the name of him who said, "Suffer little children to come unto me for of such is the kingdom of heaven."

A pall of ignorance, superstition, fetich worship, asceticism and blind devotion to a degraded and degrading mythology settled over all Christendom and remained there for more than a thousand years. The head of the religious hierarchy was literally king of kings and its authority supreme in every detail of life. Finally when Europe began to rouse from its lethargy, it found an organization in possession of a large fraction of its lands and other forms of wealth, and more thoroughly systematized and entrenched than any other that the world has known.

For unqualified monotheism we must look to the Koran of Mohammed. But into this presentation of the oneness of God, we find woven a most disgusting mass of myth and miracle. The sword is offered as the most fitting and commendable means for propaganda of its doctrines; and the faithful who die in its defense are promised unbridled satiety in a heaven of eternal and unlimited lust.*

Civilization had not yet taken root and what of it the Greeks had left was extinguished. What the world presented at the period we are now considering, though it may be a thousand years after the alphabet came into use, is a mass of savages and barbarians but slightly removed from the original types, a few of whom could read and write.

*For a ready reference on this matter, see Irving: "Mahomet," pages 212 and 213.

Rome, through the twelve centuries of her existence, bequeathed to the world bridges, aqueducts and highways that are eternal models of construction; a literature second only to that of Greece; a corruption of Christianity; and a system of jurisprudence that, in great measure, still obtains: but in science and invention, she did little that is worth relating. And in her decay, she left the masses of humanity as ignorant and more debased than she found them.

With the breaking up of the Roman Empire that was well under way by the year 500 A. D., there disappeared the governmental organization, the centralized power necessary to make a success of the chattel slave system in industry. Another system of production had to be devised and human institutions modified accordingly.

The European divisions of that Empire dissolved into little self-governing localities—thousands of them in France alone. Each collected its own taxes and regulated its internal affairs. Each contributed to a central governing body an annual payment or a quota of men for a period of military service or both; and in return received guarantee from this central authority of protection in case of invasion by other powers. Each was under a governing head, a sort of duke or lord or baron and his subordinates who were the owners of the feudatory. The masses, serfs, worked the land on shares, or cultivated so many acres for themselves and so many for the feudal lord, or worked so many days in the week for themselves and so many for the master, or served a certain period of each year in the army, or directly served their superiors in some menial capacity.

These serfs were not absolute chattels as were the slaves of the old empire, but were considered as a part

of the feudatory estate upon which they worked and a transfer of its title carried with it a right to their continued service. All told, this was a system of labor exploitation well suited to the condition in which it had its origin. It was at once a more efficient means for garnering the products of labor than was the chattel system and productive of less friction between the exploited and the exploiter.

The lords extracted tithes from the serfs and those higher in authority collected their levies from the lords. The feudal heads lived in comparative luxury, in castles surrounded by moats and spent their time in attending mass, hunting, making war upon each other, and in robbing their neighbors, or travelers and commercial caravans.

Such, in brief, was the industrial system of Europe for, in round numbers, a thousand years. There were always free laborers, artisans, in the more populous centers with their organizations (guilds) who did much of the skilled labor of manufacturing, but the great productive force was the vast body of serfs who tilled the soil, reared the meat, ground the grain, spun and wove the flax and yarn—who practically fed, clothed and sheltered the nations.

This is the long period of the dark ages. In its ignorance and superstitious frenzy, it burst into a long series of death dealing Crusades in a vain effort to wrest the sepulcher of Jesus from the infidel Mohammedans; into religious wars that reddened Europe with blood; and into a system of heresy hunting that sent tens of thousands to the rack and the flames. Tales of miracles ran riot, witches abounded and human ingenuity was exhausted in devising means for exterminating those possessed of devils. Priestly authority was supreme and

Peter's pence, annual tribute, the sale of indulgences (the privilege to sin for a certain period), expurgatorial masses, personal bequests, state annuities and the Crusades had enriched the church beyond the dreams of a Midas. But learning was so thoroughly a stranger that one who could so much as write his name could plead the "benefit of clergy" and reject a trial by the civil authorities. Little wonder that Aristotle still remained a text within the narrow bounds where such a thing were necessary. Science absolutely slept while mythology and fanaticism triumphed.

But it could not be ever thus. Europe was to awaken and start upon a forward movement that is still in progress. Various circumstances and conditions contribute to the revival of learning and the decline of the power of the mythologists. The fall of Constantinople, in 1453, at the hand of the Turks, sent broadcast over the western countries, especially Italy, France and Germany, the contents of some valuable libraries. One year later a German, Gutenberg, gave the world the art of printing. A long felt commercial necessity for a shorter route to southern Asia sent Columbus across the Atlantic, in 1492, and started a series of discoveries and explorations that were a source of fruitful thought. In 1508, Raphael and Michael Angelo were reviving art as had no others since it perished with the Greeks.

By 1517, the sale of indulgences and the general corruption of the priesthood had become intolerable even to some of its own membership and Martin Luther had formally launched the Reformation. Royalty and the property owners of the cities saw in the proposed reform release from a burdensome tribute that had long gone to replenish the papal treasury and for which they had

slight returns; and royalty saw in addition an opportunity to confiscate vast holdings of the church. These were arguments of far more potency than were contained in the ninety-five propositions of Luther's attack. These forces soon joined hands with the seceding priests and a movement was launched that rapidly dislodged the papal power in practically all Teutonic nations.*

In 1521, Magellan passed around South America in a vessel that circumnavigated the earth—a fatal blow to the flat, four-cornered idea that “authority” had long sanctioned. Within another decade, the great work of Copernicus laying down the heliocentric theory of our solar system was launched; and outside the priest-ridden centers, his ideas rapidly took root.

During this period, schools and universities multiplied rapidly and their curricula, or courses of study, began to include something more than mathematics and the dead languages. Science was gaining a foothold (and especially was this true a century later), and with every step mythology was losing its grasp upon the human mind. As has already been indicated in the opening chapters of

*The Latin nations continued under the old regime. True they were deeply affected by the spirit of the time, but the coercive power of the established church was stronger than the influence of the awakening thought. This repressive force was exerted through the Inquisition, an institution thoroughly organized with courts of unlimited power to deal with all who were even suspected of the crime of questioning the authority of the priestly hierarchy. These courts were thoroughly entrenched in Italy, France and Spain. In the latter country, for instance, the infamous Torquemada was appointed by Ferdinand and Isabella as chief inquisitor and commissioned by the pope as Confessor of Sovereigns. Between 1483 and 1498, this monster brought to trial 114,000 victims guilty or suspected of doing a little independent thinking. Ten thousand, two hundred of these he burned alive; 97,000 others were sentenced to perpetual imprisonment or public penitence. (See Symonds: “Renaissance in Italy.”)

this work, the movement was slow but with ever-accelerated speed.*

With the revival of learning and the increase of intercourse between the nations, the demands upon international commerce, and consequently upon manufacturing, were constantly increasing. Industrial conditions were simply outgrowing the feudal system of production. And more, the use of gunpowder and firearms forced a total reorganization of armies and of methods of warfare. The castle was no longer a refuge from an invading force. The little principality or feudatory could not meet the requirements of the advancing age. Centralization of governmental authority slowly became inevitable. The institutions of man must ever adjust themselves to the demands of industry and under this imperative necessity the feudal method of production was gradually failing. The feudatory lords and lordlings slowly deserted the weakening subdivisions for the central court of empire as they were won by its proffered opportunities for display or were conquered by its armed forces. The decline of the system extended over several centuries—a gradual absorption by the crown of minor provinces and a proportionate strengthening of the central power. And along

*The nature of the Reformation should not be misconceived. With Luther, it was an attack upon some of the doctrines and doings of the papacy and priesthood, especially the sale of indulgences; with the ruling class, it was an economic matter—an avenue of escape from the grafting system, the head of which was in Rome—it was profitable. The mythological, however, was not attacked. Nothing but the establishment of truth through inductive methods could ever shatter the mythical. The old tenets were still adhered to; the execution of persons accused under the myth of witchcraft was everywhere prevalent. Luther himself told in detail of his personal encounters—actual hand to hand fights—with the devil in human form and substance. But it excluded the papal Inquisition and the universities began the line of work that gradually set aside the myths.

with this went the gradual substitution of the wage system of industry for the serf system. The last vestige of the order of the middle ages may be said to have disappeared in the union of the South German Confederation with Prussia and the launching of the present Empire in 1871.

Out of the new order of things there arose a large class of merchants, traders and manufacturers. These occupations had always been held more or less in contempt by the royalty and the petty nobility; but as industry developed and wealth accumulated, these hitherto despised elements began to assert their claims to recognition. Again, as knowledge spread from the seats of learning, it was, at least to a small degree, absorbed by the masses. Books were printed and their perusal became universal to a degree never before possible. Another circumstance of tremendous potency lay in the fact that the common soldier was being put in arms that scorned the old paraphernalia of knighthood.

With all this came necessity for, and, consequently, ideas of democracy in government. The tendency was toward a centralized governing body whose members should represent the business interests rather than the requirements of the nobility and priesthood. Against this encroachment upon the absolutism that sprang from the decaying feudatories, this tendency to government through the consent of at least a part of the governed, was arrayed the imperial interests—the owners and exploiters of the landed estates and those clothed with authority through inheritance—royalty of every degree. These were entrenched in executive and judicial functions and even in the legislative wherein it existed. The tremendous power of official patronage was theirs. When,

despite all this, breakers appeared upon the horizon line, they found refuge in the mythological—they invented and proclaimed the myth of divine right of kings. They and authority were wedded by God's grace and what God hath joined man should not sunder.

But absolutism along with feudalism was doomed. The spread of knowledge and the development of trade and industrial conditions generally, were inconsistent with either. Divine right received its first tremendous shock with the execution of Charles I., in 1649, and its practical extinguishment when Louis XVI. was led to the guillotine in 1793. In the mean time, England had completed her revolution, leaving her House of Commons in supreme authority and the hereditary monarch a social functionary. Among the Austro-German peoples, democracy had made tremendous strides; and in America, the first great modern republic had been launched.

To summarize, out of the decay of feudalism there arose conditions and institutions of supremest importance to the Aryan race. Among these are (1) the spread of learning, (2) the subordination of the power of the priesthood, (3) the establishment of a wholesome degree of democracy in government, (4) the formation of the Great Powers of modern Europe, (5) the establishment of the wage system of industry, (6) the rise of the modern factory system in production.

The wage system that displaced the feudal is well adapted to the new conditions. It is a device for the exploitation of labor that has decisive advantages over either the chattel slave or the serf system. In the chattel system, the product of labor is the master's and he doles out directly to the slave sufficient to keep him in working order and to enable him to produce more slaves. In the

system of serfdom, the serf is allotted time and opportunity to produce his subsistence and all the requisites for the reproduction of his kind, the rest of his time going directly to the master's service. In the wage system, the laborer's power to produce is converted directly into a commodity that the laborer is empowered to sell wherever he can find a buyer. Like other commodities, this one sells in competition with its kind at its cost of production. The laborer is not given a share of the product as in the chattel system, but is paid a wage that will average to buy in the markets the requisites to his subsistence—sufficient to qualify him for labor and enable him to reproduce his kind. Whatever method of exploiting labor is adopted, whether it be the chattel, or serf, or wage system, the result is a constant—subsistence for those who do the work of production and the surplus for those who own the sources of life. The wage system has its advantages and they are conspicuous. It removes all anxiety and responsibility attendant upon a property interest in the body of the worker without affecting the degree to which he can be exploited. It gives the laborer nominal freedom while it leaves his source of subsistence in the master's possession. It protracts the system of slavery and at the same time removes, or rather conceals its odious features. It is the consummation of industrial ingenuity in any system wherein the sources of a nation's livelihood are private holdings.

The factory system of the modern world was young when machinery began its revolutionary role. Modern inventions may be said to originate with Newcomen's steam engine, in 1705, or with that contrivance as perfected by Watt a half century later. This machine furnished a source of power practically unlimited and capable

of being utilized in any locality. It could move things, and at once stimulated the devising of other machines to which to apply the force it could impart. However far-reaching have been (or yet may be) the revolutions in industry since the date of this invention, they have their root in this device for utilizing the expansive power of steam. It spoke the entire displacing of the small factory and of the hand method of manufacturing in production.

A brief list of the principal devices and inventions that so rapidly followed are a catalogue with which all are more or less familiar; but it is a record that distinguishes the Aryan from any other branch of the human race. In 1767, Hargraves gave us the spinning-jenny; in 1769, came the Arkwright loom; and in 1779, the Compton mule. These were followed in 1786 by Fitch's steamboat, more thoroughly perfected by Fulton twenty-three years later. In 1792, the cotton industry was revolutionized and the history of the United States for seventy-five years largely determined by Whitney's cotton gin. Trevithick's locomotive appeared in 1804, but it was in the hands of Stephenson ten years later that this wonder-working device reached a stage of practicability. By 1830, a real railway was in operation, and the same year a steamboat crossed the Atlantic. In 1844, Morse and his associates demonstrated a practicable means for bringing the world into communication by establishing a line of telegraph; and by 1866, a cable connected Europe and America. The same year brought the electric dynamo; 1876, the telephone; 1878, Edison's electric light; 1884, the linotype; and 1896, the wireless telegraph. And all these are but the parent stock whose progeny number by thousands.

Next to our industrial development (nor even second to it), the triumph of scientific experimentation during the

last three centuries is the most conspicuous characteristic of civilization. The truths deduced therefrom constitute a most potent factor in the life of today.

Copernicus was the first to break from the old theories and heads the grand procession of scientists that the modern world has produced. He was followed, about sixty years later, by Galileo, who began his iconoclastic work about 1585. This heretic had to combat both the unscientific, non-experimental school of the followers of Aristotle, and the mythologists; and the one was about as bigoted and contentious as the other.

Galileo has been called the father of experimental science; and when we consider the conditions in which he labored, and the extent of original investigation that he pursued, the title is justly bestowed. He demonstrated one of the principal laws of falling bodies and the laws of motion—a work later carried to completion by Huygens and Newton. This is the work that developed his long and bitter contest with the followers of Aristotle. He discovered the laws of the pendulum and applied that instrument to the timepiece. He constructed a telescope and a microscope. With the former he discovered the satellites of Jupiter, the ring of Saturn, the phases of Venus, and—as the crowning horror of his heresy—spots on the sun. Little wonder that he got into trouble with “authority” and the old school.

He is followed by Torricelli and Pascal, who make mechanical proof of the pressure of the air, while a contemporary, Harvey, in 1628, is proving the circulation of the blood. The work of Kepler and of Newton has already received sufficient attention.

While Franklin, in 1752, was doing his important primitive work in electricity, Wolff was laying the foun-

dation for the singularly significant study of embryology. It was not, however, until the first half of the following century that this science assumed high rank in the hands of such men as Baer, Muller, Remak and Kolliker.

Similarly, the law of the conservation of energy was outlined by Lavoissier in 1789, but the real significance of the discovery was not generally grasped until the indestructibility of matter and force was demonstrated by Helmholtz and Mayer about 1840. Joule, in 1845, in his proof of the mechanical equivalent of heat, richly supplemented the work of these men.

As shown in earlier chapters of this work, Herschel, Laplace and their immediate successors formulated the nebular hypothesis about 1800. At the same time Cuvier founded the science of ancient life and fossil remains—paleontology. In 1810 and the decade following, Dalton gave the world the atomic theory and started the tremendous work of modern chemistry.

The science of geology began to take definite form—to divest itself of compromise with myth—in the work of James Hutton, in 1795. Since that time such men as Geikie, Dana, Le Conte and their European contemporaries have raised it to a science of the highest rank. With the possible exception of the theory of evolution, no other line of discoveries has had so marked an influence upon human thought as have those made by the geologists. At their touch the old cosmogonies crumbled. Physics, chemistry, biology, astronomy all added confirmation of their conclusions. As we read the story told in the rocks, the mighty past is in review—a nebulous mass, a liquid ball, a condensed crust, land and sea, soil and rock formation, life—the panorama of a million ages.

Lastly, and crowning all man's efforts to decipher the

vast book of nature, came Lamareck and Darwin with their evidence of the mode of development of plant and animal life—with the incomparable theory of evolution.

We said of the inventions that were enumerated that they were but the parent stock. So may we repeat of this sketch of the work in the lines of science. So thorough and extensive are its developments that its specialized departments now number by hundreds. Every hour the hitherto hidden relations of phenomena are being brought to the light; every hour truth is being revealed. And these are the revelations that modern science substitutes for the ancient myths.

As a characteristic of our civilization, the production of wealth and the concentration of its ownership is of most vital consequences. Three circumstances contribute to the unparalleled productivity of modern labor. First, mental equipment consequent upon the universality of the rudiments of education. Second, the discoveries of the scientists that have revealed vast storehouses of raw material hitherto entirely unknown as well as the methods of their utilization. Third, machinery that has multiplied many fold the productivity of human effort.

In any system wherein nature's resources and the means of production are held as private property, there can accrue to the laborer—the dispossessed—an average of subsistence only. As previously stated, the present system converts labor-power into a commodity; and that commodity, in the inevitable condition of competition, cannot command a wage—cannot sell at a price—that will average to buy in the markets more than such a subsistence as will reproduce the laborer. The remainder of labor's product, tremendous as it is, passes into the possession of the exploiters of the producing masses. Out of this remainder

are builded the vast private possessions so typical of our age.

These vast fortunes have increased in magnitude just as the conditions from which they have sprung have developed. They are the product of the same period that has given us public schools, universities, general rudimentary education, the practicable in science and the vast masses of machinery. The degree of exploitation that present conditions warrant finds nothing with which it is comparable in all the past; and ancient concentrations of wealth or of wealth-ownership are insignificant in comparison with ours. The modern trust is a concentration of power such as man has never before confronted.

A requisite to the successful exploitation of labor and, consequently, to fortune building, is a ready means of disposing of the vast labor-product that the producers cannot buy nor the non-producers consume. This necessitates a foreign market for a tremendous quantity of produce. As there are many nations clamoring for every available crumb of such market, there is a constant and inevitable conflict of the interests of the exploiters in their efforts to gain, and to hold it, when once secured. In that conflict, the efficient weapon, the essential requisite is a modern navy.*

In all the annals of our race there is no other circumstance or condition more appalling than the national madness with which our energy, ingenuity and revenue are now bestowed upon the construction of the enginery for international war. We must retain our trade in foreign lands and constantly augment our holdings. To do this,

*For a thorough discussion of the matter herein suggested, see "Industrial Problems," by the author of this volume. Published by Chas. H. Kerr & Co., Chicago, cloth \$1, paper 25c.

we must qualify to crush a competitor—we must float in greatest number the most powerful and the best manned instruments of destruction.

Such is the measure of inventive genius displayed in contriving this enginery, that today we invest multiplied millions in mighty floating forts that tomorrow are obsolete. Now it is battleships, now dreadnaughts, now submarines, now flying, derigible bomb-throwers and now come whispers of a manless terror controlled by a wireless system of electric currents.

And so the contest for supremacy upon the sea and land goes on, and so it must go on until the death-dealing machinery is such as to make war impossible; or till an industrial system has been devised and inaugurated that will make it unnecessary.

In this brief study of our race, we have seen the chattel slave system come into human institutions and have noted the conditions that brought it into being. We have seen the circumstances evolve that rendered it unfit to survive. Out of these changed conditions came the feudal system that for a thousand years met man's requirements. Again came a series of changes in human affairs, changed relations between man and man and between aggregates of men, changed modes of securing a livelihood, that forced the serf from the field of industry and established in his stead the worker for wages.

We have likewise observed the ever increasing productivity of human labor; the utilization of nature's resources that finally enables us to support upon a given area a hundred fold more human beings than could formerly live upon it and to produce wealth beyond the wildest imaginings of our forefathers. And we have also noted that since the dawn of the chattel slave system till the present

hour, there has gone to those who have performed or who still perform the labor of production but a fraction of their labor-product. The constantly increasing volume of surplus has but enriched (or at least supported) an ever swelling number of parasitic humanity; and finally created the billionaire with all that that implies.

The first to clearly comprehend the recent trend of matters industrial was Karl Marx. In his analysis of the system of production now in vogue, and of the essential nature of the value in commodities (the things sold in our markets), he discerned the real effect of the establishment of the wage system. It converted labor-power—the physical, manual and mental qualification to work in the industries—into a commodity; made of it a thing to be bought and sold in the market under stress of competition the same as other things. The wage system, therefore, could not average to supply the wage worker with more than such part of his product as is necessary to his sustenance; that is, his livelihood and the rearing of children qualified to take his place when his career is ended.

Again, it was evident that the machinery, so rapidly coming into use, was destined to multiply many fold the productivity of labor; and as the increased product could not accrue to the laborer, it must accumulate as the possession of the exploiting owners. By 1850, the embryo of the multimillionaire and even of the billionaire of a few decades later was in evidence. That industrial conditions would soon evolve him, was too patent to escape such an analyst as Marx. Nor was this all. With his evolution must come all that such concentration of the ownership of wealth implies—inordinate affluence, the degradation of abject poverty, the decay of a wholesome spirit of patriotism, a corrupted state, a plutocratic tyranny. Civ-

ilization must inevitably be subjected to a strain that it could not long withstand. Our institutions would succumb as did those of the ancient empires. We must internally decay.

To prevent such disastrous consequences, it would be necessary to revolutionize our system of industry. Our tremendous machinery of production must cease to be the private holdings of a few; must cease to be a labor-exploiting medium; must be converted into a collectively owned institution and humanity into a producing whole—the exploiter of labor must be eliminated as an industrial factor.

Such a consummation could be attained only by 'a united effort of the exploited masses. They must join forces everywhere, wrest the powers of government from the exploiters and establish a co-operative commonwealth. The endeavor to do this must inevitably align the opposing forces on the basis of their economic interests—must oppose the two economic classes, the exploited and the exploiters, in a struggle for supremacy.

It must furthermore be noted that the attitude of men toward each other and toward the prevailing institutions at any given period, is determined by their conception of their economic interests both as individuals and as groups or economic classes. Men endure slavery primarily because they are ignorant and secondarily because they have not the opportunity, the means, the power to resist. In the new conditions, with a vast public school system imparting at least some rudiments of knowledge to a very large per cent of the producing masses; with education becoming more general than ever before; with books, newspapers and other means for spreading information almost as common as water, the injustices practiced upon the pro-

ducing masses must become apparent to those masses. As they gain this knowledge, the remedy for their wrongs is self-suggestive. They organize, exercise the political rights that democracy has vested in them—the right of franchise—to place their own class in power.

Again, as industry concentrates into vast corporate holdings represented solely by stocks and bonds, it becomes ever more apparent that the owners of the paper representatives of the great concerns are directly no part of them. The non-essentiality of these bond- and stockholders is ever more clearly comprehended. Every essential function connected with industrial establishments is passing into the hands of employees. Even the funds for their construction, the original capital, has been exploited from the labor of other groups in similar institutions. All this must finally become a part of the knowledge of the workers; and as a logical sequence, there would develop a determined effort on the part of the exploited to remove from industry the useless, parasitic exploiters.

In such conditions, the rise and spread of the doctrine of the Socialists was but the regular sequence of cause and effect. At first, as might be anticipated, the real nature of the revolutionary forces at work in society was not clearly discerned even by the great students of philosophy, history and economics; nor was there a clear conception of the outcome of it all or of the manner of its coming. But in the hands of Marx and his associates and successors, the entire philosophy of passing events was put upon a thoroughly scientific basis and the propaganda was henceforth carried on from that standpoint with accelerated effectiveness.

Today this propaganda reaches every part of the earth. Everywhere the conditions that make imperative

Socialism in industry and the concomitant modifications in human institutions are rapidly developing, if they have not already reached a consummation. And, as a consequence, the labor forces are joining in solid phalanx on both the industrial and political fields. Their representatives are thronging into the world's parliaments; and what shall constitute future human relations and institutions—civilization—hourly approaches its determination.

We are now passing through the third great transition period since the dawn of what we denominate civilization. The first witnessed the passing of chattel slavery; the second, of the system of the feudal serfs; and the third will terminate in the overthrow of the last resort of the exploiters of human toil—the wage system.

Likewise, we have seen the tyranny of the priesthood, of the mythologists, displaced by liberty and democracy in conscientious thought and action through the revelations of the scientists; the tyranny of the self-proclaimed appointees of the Most High to reign over us as subjects go down under the heel of the spirit of democracy in government; and we now witness the surgings of humanity in an appeal for the triumph of all triumphs—the overthrow of tyranny and the establishment of democracy in industry.

X.

SOME AFTER-THOUGHTS

We have briefly scanned the stages of development of our race. An interesting story, is the story of our evolution.

There were periods in man's career that seem to us like eternities in which his institutions remained practically stationary, in which he was in a state of mental stagnation. There were others, as in the case of the destruction of Greece, and during the triumph of the priestly hierarchy of the Middle Ages, in which he suffered from actual retrogression. But, historically speaking, these were temporary and again he resumes his march toward higher and better things.

The grand total of all that he has achieved is the sum of the artificial elements in our daily environment.* And when we contrast the environment of man in its two extremes—at the beginning of his career and at the present hour—the chasm that has been bridged is startling to contemplate. The gulf that separates the tree-dweller from the modern scientist is an abyss that is appalling. It has been crossed—but by a very small per cent of our race.

We are prone to estimate civilizations by their highest types. The standard is misleading. A truer measure of the attainments at any given period by a given people is what that people would tolerate at the hand of its highest types of manhood. When ideas must be taught or propagated esoterically, when they must be confined to the narrow circle, when they would be rejected by what may be termed the middle stratum of a society as dangerous and heretical, they are not just standards by which

*In this grand total must be included the increase in mental power over that of our progenitors, in fact, all that we have acquired or achieved that must be accredited to influences or forces that nature does not supply ready made. Civilization is artificial. Its total destruction would not eliminate even the Caucasian element of the human race, but would plunge the surviving remnant of it into an environment wholly unmodified by design or the consequences of reasoning.

to estimate the accomplishments of that people. The advance guard ever represents not the then present, but the future civilization.

The advance guard has ever been in contempt of those who represented the organized power of the mass—those who represented the real status of a people considered as a collectivity. That guard comprises those who, through variation and heredity, were endowed with abnormal mental acumen. And often, indeed, has that variation disqualified them for survival.

The masses are the normal descendants of the savages. Their brains are, of course, an improvement on the original types because, on an average, the more intelligent have been the fittest and have excelled the mentally weaker in the contests for life. But this mass-development has been exceedingly slow. How slow, might be determined by bringing to maturity a generation of our babes in the environment and under the tutelage of the primitive savage. They might make superior savages. Some of them would. But, on the whole, their superiority would not be flattering to our vanity.

Our race is destined to higher levels than we have yet attained, probably to a much greater advance upon our present standard than is ours above the original. The indifference and ignorant intolerance so characteristic of the savage, and that is still strongly in evidence, must ever be overcome; but that it will weaken as a barrier to progress, the history of the last three hundred years certainly testifies.

The sociologists tell us that we cannot superpose our civilization upon savage or barbarous races. True. Nor can we superpose the best in our civilization upon but few of our own countrymen—because they are so little

removed from the savage or barbarian. True, they may know "how to appear in society" and even evince degrees of certain species of refinement. This not because of mental powers, but in response to a course of training that has been theirs from infancy. But what of their mentality? How few of them ever harbor a thought beyond that of the most commonplace. The savage tires in a few seconds under intense mental application; the vast majority of what we call civilized men and women shun the really intellectual as a bore. And why should they not? Let us recall our figure of the fifty-foot line that represents man's career. Each foot represents five thousand years. The first thirty feet is savagery; the next nineteen, barbarism; the one remaining foot, civilization. But that does not mean that all Americans and Europeans have passed the entrance point of the last foot. To really pass that point implies more than merely to be able to represent sounds by characters and to read trash. The average barbarian and many savages could be taught as much if trained from infancy with equal persistency. No, there are many, very many, who belong somewhere along the line far outside the last twelve inches. They are but whitewashed savages or barbarians and that wash is commonly thin and in spots. An index of our mental status as a mass is found in the reports of our librarians.

The brand of the savage is more or less visible upon us all. We see it in our superstitions, in our adherence to "signs of this and of that," and the folly of portentous dreams. Even when we have learned the foolishness of such things, it is practically impossible to entirely divorce ourselves from certain responses to stimuli that have no basis but the mythical. Our reason proclaims, "There are

no ghosts''; our savage instincts whisper, ''but I am afraid of them.''

The savage element in our makeup is likewise revealed in our worship of heroes and fetiches. The worship of heroes extends not only to our political and military leaders, but to ''superiors'' generally. Slaves will quarrel and fight over the question of the relative merits of their masters. Millions stand uncovered, awed by the presence of mental mediocrity that, through the accident of birth, is assumed to represent power and authority. Thousands of laborers obsequiously bow before a display of wealth that was extracted from the very blood of their veins and of which their own wives and babes were despoiled. Multitudes, even in our most enlightened nations, still kneel as suppliants before some particle of bone and beg the favor of its power (or of that of its reputed original possessor) to heal their bodily ills. Such conduct cannot be classed as atavistic. They do not in such deportment represent a reversion to a more primitive type. They are still in the mental status of that type. Reversion implies that there has been an advance; their abject fetich worship disproves it. Fortune telling, divination, sorcery, palmistry and other progeny of the ancient myths still command a profitable patronage. The love for and the fear of the mysterious, the mythical—the dominant element in the life of a savage—has by no means lost its sway over the conduct of men.

How natural and consistent seems all this foolishness when one has made even a superficial study of our racial development. The lowest savage represents what was once the highest mental type of our lineal ancestors, no matter what may be our present status. And when we recall the slow process of evolution and the relative insig-

nificance of the time that has elapsed since we emerged from barbarism, or, for that matter, from savagery, the wonder is that we have attained such heights as we now enjoy.

It is the knowledge gleaned from the study of man that teaches us tolerance of and patience with his shortcomings. We are through such a study, brought to realize that he is but a more or less developed animal. Qualities of mind, as well as of body, must first be attained and then long be maintained in order to become fixed characteristics. The qualities that characterize the truly civilized man are of very recent origin and are as yet far from being national traits. That they will become so, is by no means impossible.

We have in ourselves the evidence of what evolution has wrought from lower forms. If the environment of civilization can be maintained and strengthened, the development of a race of beings far superior to us is but a matter of time. This time could, and doubtless will be shortened by a sane and scientific selection in the propagation of our race. That function is now very largely delegated to the ignorant and the physically unfit—a species of folly that an additional degree of general intelligence will not tolerate.

The progress of the Teutonic and Latin nations toward a higher civilization during the last three centuries is truly phenomenal. It is wholly without parallel in the history of human achievements. Considered by centuries, if not by half centuries, that progress has been in geometrical ratio. It has gone hand in hand with the discoveries of the laws of natural phenomena, with the development of science, and the application of mechanical contrivances in industry. It is a consequence of the experi-

mental, the inductive method of learning nature's way of doing things, and the enslavement of nature's forces in production.

With ever accelerated rapidity during these centuries, the mythical has been abandoned and the results of experimentation adopted. Men have sought for truth not in old legends, allegories, traditions and myths, but in the doings of nature itself. And through the channels of information made possible by the printing press, the schools and the universities, the revelations of the scientists have gained a hearing never before accorded the thoughtful. Under the terrific blows dealt them, the old concepts and theories have crumbled and fallen. Darkness has faded before the light of truth demonstrable.

With the great mass of mankind the effect of the revolutionizing work of the world's leaders of thought is a mere reflection. Nature to them is still a hidden book. They may be able to repeat some formulas, but the inspiration born of actual comprehension is not theirs. The study of relations is, for them, without charm. Their hourly discourse and their choice of reading matter—wherein they read at all—is a certain index that truth intrinsically has no hold upon them. Parrot-like they pipe a few things they have been told or, with an indifference that is pitiable, they shun all discussion that incorporates intelligent thought.

There is reason for this outside the fact that some minds are incapable of grasping the more or less abstract ideas so full of interest to the intellectual. The most potent among these reasons is found embedded in an industrial system that converts the life of this mass of humanity into a daily grind for a mere subsistence. Their lives are absorbed in an interminable struggle to eke out

an existence. In their toil they create many times what it is their privilege to consume. They live in squalor that their exploiters may revel in luxury. The consequence is that they have not time nor opportunity to qualify for a life in accord with a status that should be denominated civilization. Their early mental training is deficient in every detail. There is little in it that is thought-inspiring and even that little is withdrawn before they have ceased to be mere boys and girls. It leaves them disqualified to appreciate a thought worth entertaining. In that condition, they sink into the mental mire of the mills of toil and the development of intellect, except such as their labor requires, is forever barred. What should be merely an incident in their lives—the procurement of subsistence—becomes the end and aim of their existence—the merciless absorbent of human souls.

A revolution is in progress. The passing of capitalism—the wage system of industry and the institutions necessary to its maintenance—is now too apparent to escape the attention of any but the most superficial observer. Industrial tyranny and oppression will be swept aside as have already been that of the priesthood and of the “divinely appointed.” The fruits of labor will soon be the heritage of the laborers and toil will be no more. Then there will be time and opportunity for self-improvement and a training of boyhood and girlhood, and of young manhood and young womanhood, mental, moral and manual, that will qualify them for a life that is worth the living. The brothel, the pool room, the cheap show and the trashy novel that now absorb so large a part of the little time that is theirs will be relegated to oblivion along with the industrial, and the consequent social system that fosters them.

The barbarous system of industry that now obtains with its billionaires and its slums, its degradation of manhood and womanhood through excessive riches and excessive poverty, its waste of human energy, its masses of parasitic institutions, its white-slave traffic and its child-slave toilers, its sweatshops, strikes, lockouts, panics and wars, will soon be a thing of the past. The forces are at work that make it impossible of maintenance. The exploited masses are acquiring the knowledge that awakens them to a sense of the injustice that is practiced upon them and of their power to end it. When this is accomplished, a status of humanity will have been established that may consistently claim the title civilization.

The coming generation of historians will modify our classification of the conditions of man. When they look upon a mass of humanity steeped in ignorance, superstition and vice; when they behold the charred remains of tens of thousands of burning heretics whose only crime was an effort at thought and an attempt to stay the ravages of fiends; when they hear nations applaud the antics of imbecile, hereditary tyrants; when they witness a hundred thousand toiling that one may revel in a useless accumulation of their labor-product; when they look upon millions of boys and girls of a Republic qualifying for manhood, womanhood and citizenship in the industrial hells of capitalism; when they see millions slaughtering each other in an effort to determine which of two organizations shall exploit a certain territory, or what set of capitalists shall control a certain market, they will rechristen the status that is now so rapidly approaching its termination. Semi-barbarism is a far more consistent appellation than the one now appropriated. Civilization will have another and a more specific meaning. Its initial

Characterization will be the establishment of justice, not the use of an alphabet.

The coming order will destroy nothing that is worth preserving. The good and the true is incapable of destruction; therefore, all that can rightfully claim such distinction in religion or ethical code of the past will stand unshaken through the future. The creeds have nothing to fear for any tenet that is worthy of retention—that will stand the test of the search for truth that is now waging and that must ever continue with increasing rigor. In governments, all that ministers to justice—all that maintains such relations between men as justice demands—will be preserved and strengthened.

The world can but brighten from the elimination of the mythical in creeds or the obsolete and oppressive in the organizations of society. What it needs is truth and justice. Of these for ages it has known but little. The one never had but scant abiding place, and what little primitive humanity knew of the other was banished at the coming of the exploiters of toil. The new order will find a way to both; and that which is not in accord with the findings will be relegated from human institutions.



SOCIALISM AS A PHILOSOPHY OF SOCIAL PROGRESS

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I.

SOCIALISM AS A PHILOSOPHY OF SOCIAL PROGRESS

Among most of the races of men, human life is engulfed in a vast series of institutions. We live amidst what the world calls civilization.

We have, for instance, our educational, our religious, our industrial institutions, our means for transportation and exchange, our hospitals, prisons, armies and navies, our elaborate systems of national, state, county, township, and municipal governments, our means for acquisition of ownership of the earth, and for the passing of that ownership through the accident of birth, our methods for governing and limiting the relation of the sexes, and many others of minor import; and our material civilization is but their sum total.

It is at once apparent that civilization is wholly artificial. In its entirety it is man made. It is therefore subject to man modification and even man destruction.

Eliminate from our environment this vast accumulation of institutions and there is left the relatively barren surroundings of the savage. All that has been added to nature's furnishings is the product of the hand and brain of man working through the long ages of the past.

These institutions are elements of our social organization through which we purpose to carry out or to enforce what we conceive to be necessary and right in human affairs. For instance, we now hold it right and feel it to be necessary to educate the boy and girl as each grows to manhood or womanhood; hence, our educational institutions. We recognize a vast series of relations that should be maintained between individuals of the same sex and of different sexes; between the individual and the community and between different communities—relations social and industrial—and to preserve and enforce these relations—to enforce our conceptions of what is right and what is wrong—we institute a labyrinth of governmental devices.

These institutions are mighty things in human affairs. From the cradle to the grave we are ever subject to their influences. And as the child in its pre-natal state, subjected to the forces and conditions that, through the elaborate processes of man's evolution, have been embodied in the parents, passes from the lowest stage of life through the various forms of its pre-human ancestry; so in its natural life, subjected to the forces and conditions that evolving civilization has embodied in our institutions, is it seized upon as an infant savage, passed through each successive status of human advancement and merged into the civilized being.

As already suggested, human institutions are man made and subject to man modification or destruction. In

fact the degree and character of the modifications they have suffered is a general index of human progress. Government, for instance, has passed through such radical variations that some of its earlier forms, though the lineal progenitors of those of today, have been obliterated almost beyond recognition. The institution of chattel slavery that flourished for thousands of years as the chief method of exploiting the laboring masses, has passed entirely away, has been supplanted by another and more effective means for accomplishing the desired result. New institutions have come into being from time to time, such as our public school system, railways, telegraph, electric machinery, telephone, etc.

Now all these formations, modifications or obliterations of institutions are effects; that is, they are the consequences of one or more causes. They did not just happen, nor did they, like Topsy, just grow. They are the progeny of necessity.

Men are inert beings. They do not act as individuals or in groups except as the consequence of some external stimulant. They yield to compelling force either in the hope of immediate reward or to avert consequences more or less disastrous to their interests; and then very much as other forms of matter—in the line of least resistance. They are, enmass, little swayed by logic. That is not a compelling force; and from such force as it may embody, they are well nigh mentally immune.

Yes, as said, these practically all-determining things in human affairs, our institutions, are effects. The discovery of their cause, or at least that cause that by comparison dwarfs to insignificance all other causes, is one of the great triumphs of nineteenth century thought and research. That cause is essentially material. The force

responsible for the bringing into existence, for the perpetuity, the modification or the obliteration of a human institution of whatever nature has its source in man's mode of getting a living, in the prevailing system of industry among a people when and where such effects are witnessed.

Human institutions, then, and as well human conceptions of what constitutes right and wrong relations between individuals and groups of individuals, of what is moral or immoral, justifiable or unjustifiable in human conduct, all have their origin in the economic necessities of today or have sprung from those that prevailed during ages past.

It is not here implied that, for instance, in the ushering in of Socialism, causes other than our immediate economic needs are without influence. In the resultant of the forces that are overthrowing the system of capitalism are elements embodied, as it were, in the human make-up as a consequence of conditions that were prevalent during past time. There is a sentimental element that reaches the deepest recesses of our natures, that is the chief propellant that forces many a refined soul to revolt against existing conditions. There is also a moral element or force that must not be overlooked, a moral reason for capitalism's passing that is as cogent as for anything that has ever transpired in the history of the race. But Socialism will never be a status of civilization because of our finer sensibilities nor because of any degree of moral necessity for it, or of the immoralities of capitalism. Were these the sole reason for capitalism's overthrow, it would stand a mass of immoral rottenness until civilization would burn out. Appeals on these lines win many adherents to the ranks of those who work for the estab-

lishment of a higher and better state of man, but in numbers wholly impotent to deal with the forces of reaction. If the masses of mankind cannot be brought to see and feel the economic necessity for industrial revolution and all its concomitants, that revolution will never be wrought. Socialism must come as the resultant of the material forces now evolved by capitalism or it cannot come at all. Why? It is the purpose of this lecture to at least partially answer that question.

Institutions are born of economic necessities, of economic conditions—of man's mode of getting a living.

For a discussion that must be far less than exhaustive, selection of proof might be made from practically any series of great events during any epoch of history, ancient, mediaeval, or modern. But there stands out boldly one eventful epoch that supplies what is probably the strongest and most concise evidence to be found in all the annals of the race; and as it includes the introduction into man's affairs of an entirely new mode of getting a living, its material is right to the point. It is known as the second or middle status of barbarism, the fifth in the evolution of man. Furthermore, as we are still living under the influences of the institutions that sprung from the conditions of that time, we have a vital concern in all that it presents.

The Introduction of Agriculture

This epoch is characterized by, among other things, the introduction of agriculture, the cultivation of the soil, as a chief means for the acquisition of a people's livelihood. The institutions that are a direct consequence of this method of acquiring human subsistence have ever since been the chief factors in racial development and

progress. We cannot in, so necessarily brief a treatise consider them all. A few of the most typical and important are selected.

During the three stages of savagery and the one of barbarism that preceded this all-important epoch, and for that matter, and especially in Europe, during a great part of this period itself, the cultivation of the soil was not a means of livelihood. Our ancestors, in common with those of any other people who have attained the fifth status, had garnered subsistence from the products of nature wholly uninfluenced by man; from roots, fruits, nuts, the seeds of grasses and other plants, from fishing, hunting and, especially in Europe, from the raising of domestic animals. And their modes of thought, their conception of right and wrong—of what constitutes proper relations between human beings—their moral and ethical codes, their religions, forms of social and governmental organization, their institutions of whatever nature, were (and for peoples so circumstanced still are) in keeping with their modes of industry. They were nomadic and warlike in the extreme. There was nothing in such pursuits that induced to the founding and building of what we now denominate nations.

But when these pursuits ceased to be the chief occupations of man, when he began to attach himself more firmly to the earth, when he learned to systematically cultivate the soil—to force by human effort a living from the ground upon which his predecessors had died of famine—his former modes of life, thought and activity, his old institutions failed utterly to meet the demands of his new economic necessities. Much was wholly abandoned, and what was retained suffered radical modification.

Before considering the institutions growing directly out of this new mode of getting a living, at least two other effects demand a brief consideration:

First—Agriculture led man from his nomadic habits. It fixed him to the soil. And in the rich valleys of Europe and Asia there began to develop the future historic nations of the world. It was agriculture that made possible what we know as the nations and peoples of earth; it is agriculture that supplies the chief requisite to their perpetuity among the human masses of today.

Second—This new mode of subsistence furnished a means for supplying the needs of tens or even hundreds where units would formerly suffer and many of them even die of want. In other words, it made possible the multiplication of population far beyond what could formerly eke out existence on the same territory.

The fact must not be overlooked that when, at any given period, a territory is fully peopled, that part of earth is sustaining as many human beings as those that live upon it know how to make it sustain. The ability to garner sustenance from it, is a matter of knowledge on the part of its inhabitants.

When America was first discovered by the white man, the vast region now known as the United States with all its wondrous resources, would supply the needs of but a few millions of beings. Solely because the Indian did not know how to make it do more. The resources were here, but they meant nothing to him. There are now about half as many people in the state of Illinois as could be kept from want and famine on the entire territory of the nation in 1492. And the possibilities of sustenance from the resources of that state are far indeed from being exhausted. Those possibilities will increase, as they have

ever increased, with man's knowledge of how to use that part of earth for the greatest good of the race.

Our own fathers and grandfathers spent much of their lives in immediate touch with resources out of which has since grown some of the greatest industries of earth—a means of sustenance for millions of people and the accumulation of billions of wealth—without so much as exciting a suspicion of such possibilities. They wandered ignorantly and unsuspectingly over the great deposits of coal, gas, oil and iron that lay but slightly hidden under the Virginias, Pennsylvania, Ohio, Michigan and the adjoining states. If my own father (born in 1804) had possessed anything of a knowledge even of his own back yard, I would, in all probability, have come into the world with a ten million dollar spoon in my mouth—and never been worth killing. Triumphant Socialism will be but the application of our knowledge of how better to use the earth for the good of Man.

The Institution of Private Ownership

Among the institutions born of this new mode of getting a living—born of economic necessity—are a few that merit especial attention; and of these let us first consider that of the private or individual ownership of the land.

In a social organization in which the land serves only the primitive means of subsistence—for the gathering of nature's products, for fishing, hunting or even grazing purposes—there is very little or no economic advantage in its private ownership. Therefore, it is not so held. But when the possibility of making certain acres yield a definite return is presented, there is at once manifested a new relation between man and the earth. Out of that new relation, as naturally as effort springs for self-pres-

ervation, springs a desire for the land's exclusive ownership. That possession becomes a certain and personal means of sustenance, an economic advantage, a certain and personal source of power.

Historically speaking, this privilege of exclusive possession rapidly ripened to thoroughness; so thorough that one becomes subject to prosecution for so much as putting foot upon the holdings of another. There was no limit as to what one might acquire. The acquisition is a pyramid whose base is the surface area involved and whose apex is the center of the earth. Possession fell to him who had power to maintain it and to seal his fee simple title in human blood.

Thus was established an institution—an expression, an embodiment of economic needs—that has exerted a most tremendous sway in the developing race; that has seriously affected the daily life of every human being of the greater fraction of mankind for thousands of years.

It is not held that the effects of this thing have all been evil. Undoubtedly such a contention could not be sustained. This institution has been a mighty factor in the upbuilding of the race. But there have been at every period in civilization's development, and there are still, forces that formerly contributed to the uplift of a people; that had an elevating influence until that people reached a certain intellectual level: that then not only ceased to contribute to the uplifting resultant, but became an element of reaction, a thing of evil, tending to drag the race down rather than to build it up. Who, for instance, would question that war has been and is now such a force?

What it is here well to emphasize is that our present vital concern in this institution of the private ownership of the earth lies not in what it has been in the past, but

in what it is now. No matter what have been its tendencies in times that are gone, it is with the influences that are exerted through it today that we have to deal. It is now an element in conditions wholly different from anything known to our progenitors; and in this new environment, in these changed conditions, it has become, in conjunction with other institutions that form parts of our heritage, the destroying devil of civilization.

So long as private ownership was limited practically to the possession of a few acres of earth, or a few buildings for rental; while there remained opportunity to "go west and grown up with the country;" before the advent of modern machinery and the consequent revolution in methods and means for production, this institution possessed little of the menacing qualities that now characterize it. But when with developing conditions it is extended to include our modern highways, mines and oil deposits, our gigantic factory systems, our massive buildings that separately represent the investment of millions, and land holdings as extensive and rich as an empire; when under the stimulus of the multiplied productivity of labor and a system of industry that doles out but a mere subsistence to the millions who perform the work of production, this institution becomes a means for such exploitation of humanity and for such accumulation of wealth and power as were not even the dream of former ages; when we find a former pigmy transformed into a stalking giant, we are rudely awakened to a realization that its days of usefulness have passed—that the necessity for its overthrow is imperative. Its menacing power lies in the proportions to which the thing has grown. We face as alternatives its elimination from human organization, or the burial of our civilization along with those of ages gone. It came into

being as an economic requirement; its passing is likewise an economic necessity.

The Institution of Inheritance

Let us now consider a second institution that like the other was legitimately born of the new method of getting a living—digging it out of the earth—born of the new-found relation of man to the soil. Like the former, it is of tremendous import. The history of humanity surges around it. It is a necessary adjunct, a concomitant, of the system of private appropriation of the earth.

With the right to privately own established, there followed necessity for disposition of possessions after death—necessity for the perpetuity of ownership and power in one's progeny—necessity for the institution of inheritance.

This institution developed along two lines: First, the inheritance of property. Second, the inheritance of governmental authority.

Like the system of ownership so long in vogue, this right to inherit the possessions of others has wrought mightily in the evolution of civilization. But, as in the former instance, it is with its effects—with the power for evil that is worked through it—here and now that we must deal. It is now a worker of evil, a destroyer of that which should be preserved, and any good that in former conditions may have been accomplished through it is of historic interest only.

What it has been is slight concern compared with what it is now. As it was, it affected relatively small holdings and the power conferred through its operation lacked the element of serious menace. Today, to such proportions have matters industrial grown that the passing through the accident of birth of the wealth of a former principality

and of the power that accompanies such a holding is a common function in the regular order of things.

In California, title is to be passed upon to an acreage half as large as the state of New York. This is a region so extensive and fertile that, if cultivated as intensively as are the most populous parts of the earth, it would sustain probably double the present population of the Golden State. And in that passing what is presented for the court's consideration? Upon what ground is absolute and exclusive possession of this vast territory to be based? Does the claim rest upon any question of right, or justice, or merit, or deserving, or of the best interests of humanity generally? All these are absolutely foreign to consideration. The court takes no more cognizance of such things than if they were unknown qualities of our civilization. The one thing to establish is the question of birth. This man and woman were born of, or adopted by a certain pair, or simply named as legatees in a last will and testament; and for that reason, and for that solely, this empire is theirs.

"But this is shocking. Do you mean to imply that these possessions should not go to the heirs?" asks one whose lines of thought have ever been in capitalistic channels. No, we do not mean to imply that in present conditions such thing should not be tolerated; we mean to **state unequivocally** that the present awakening of humanity will soon consign all such relics of barbarism to the oblivion that certainly awaits them. Humanity is rapidly awakening to the fact that merit alone should be rewarded and that there is no merit in being born. We are beginning to realize that the earth must henceforth be used for the benefit of mankind and not solely for advantage of a few who chance to be fortunate in the matter of parent-

age. We are learning that the preservation of the race and of civilization is of far greater moment than the ability on the part of a few fortunately fathered to dispense social functions in squandering the labor product of the dispossessed. And when we behold not only the ownership of such an empire, but of the billions that are now amassed through the mediums for modern exploitation—the ownership of all that is worth possessing—the sources of life of all earth's masses; when we witness the divorcement of their tenure from all consideration of deserving, or merit, or justice, or public welfare, and its reduction to dependence upon the accident or incident of being born, our energies for the overthrow of such a monstrosity are measured only by our knowledge of present necessities and by the limit of human endurance.

“But,” says one, “this transfer of possession is in accord with precedent, custom and law long established.” Yes, and, like the minds of those who, uninfluenced by economic pressure, now defend it, is fossilized. We are in the living present, not the dead past. It is the conditions that now obtain and the necessities that they engender that intelligently control present conduct; and wherein laws and precedents of the past conflict with these necessities, they are to the thoughtful, the humane and the truly patriotic of no more consequence than an old almanac.

“But these institutions have stood the test of thousands of years and all the billions of humanity who have come and gone since their establishment have sanctioned them as being right,” we hear. True. And so do the millions still sanction them who have not learned better—who do not yet realize that we are living in the age of the steam engine and its legitimate and wondrous progeny.

That is wrong which works a general injury; and the channel through which work such institutions as we are considering leads directly to human economic interests. What was right yesterday is wrong today, provided its general economic consequences have in the meantime been reversed. For thousands of years—as long as it was profitable—all the billions of humanity held the institution of chattel slavery to be of divine origin; but they failed to grasp the truth that the apparently varying sources of that revelation were the universal god Mammon. With changing conditions that rendered that institution economically disadvantageous, the revelation lost its sustaining qualities and the great wrong of the thing became apparent. Our own grandfathers of Pennsylvania and other northern states abandoned the ownership of the negro not from moral rectitude on their part, not because they suffered from conviction of the wrong thus inflicted, but because they were convinced of its unprofitableness. They did not free their slaves to clear their consciences; they sold them to replenish their pocketbooks. So business today is but a mass of conventionalized and congealed falsehoods, misrepresentations and frauds. The wrong of these things will be revealed and realized when success ceases to crown their most skillful manipulators—when the element of profit is no longer the mainspring that moves the manufacturing, wholesaling and retailing worlds.

Nothing in the category of human contention is more whimsical than that there is such thing yet attained as a knowledge of, or a practice of absolute right or wrong. Right ever has been and ever will be but the best expression of what a people, in given circumstances, conceive to be proper human relations. And the dominance of the

economic factor in the exercise of those relations is too apparent to escape the attention of any except the most superficial observer.

Now as to the second line of development of this institution of inheritance. Tribes in the lower stages of evolution elect their chiefs. In fact the varying degrees of promiscuity in their sex relations make this practically a necessity. But with the establishment of the institutions of private property in land and its concomitant inheritance, together with the changes in the sex relations that these things necessitate, this practice all but universally disappears. From the passing of property through the accident of birth—the right to inherit such power as is vested in land ownership—it is but a step to the chief's conference of his right to rule upon his legally begotten.

It is well to note that the passing of governmental authority through non-merited channels has received the approval of billions of humanity. It has been held as right in many lands and for many ages. Is it right? Should the power to rule a people, to exercise a dominating influence over their legislative enactments—national, provincial and municipal—and through such legislation and by executive function generally to influence every institution of civilization and consequently the daily lives of the masses of humanity—is it right to vest such power solely through the accident of birth?

The American answers, no. None of that for us. We shot that institution to death in 1776. If an American would exercise governmental authority, let him prove himself worthy of power regardless of what his father is or may have been. And if an attempt were made to make the son president solely because the father had been so honored—to declare the presidency a birthright—every

loyal son of Uncle Sam would shoulder a gun and start for Washington the next day. No monarchy in ours, if you please. Now ask the English about it. They are certainly a nation whose intelligence and general information is about at par with ours. John Bull straightens up, pulls his mutton-chop whiskers, displays his well-rounded girth and replies: "Why certainly it is right; the heir should be king, don't you know."

And in this matter some thoughtless Americans are disposed to adversely criticise our English cousins. We sometimes rail at them of the folly, of the obsolescence of an institution through which they confer the future right to exercise such authority as must be vested in the executive of a great nation upon even an unborn babe; and that, too, regardless of his or her mental or physical qualifications for such an office—the folly of the bestowal of supreme authority to blind and unreasoning chance, to the accidental circumstances of birth.

Then the Englishman has a word to say that silences the critical American with marvelous suddenness. "Go with me to New York and I will show you an infant, an American baby, clothed with the power to exercise in the future more influence over legislation and the institutions generally of your civilization, to more deeply affect the daily lives of your people, than is conferred by placing a crown upon any head in Europe; and you confer this power for no other reason under heaven except that he is the son of a certain man. You bestow upon him, through his accidental parentage, the future right to wield the power embodied in a billion dollars; compared with which that of a hereditary monarch dwindles to insignificance. That is the power which more than all else designates those to whom governmental authority shall be delegated,

that formulates your legislative enactments, controls the policies in their execution and dictates their judicial construction—the real governing power of your world. And it is more. These billions in the hands of the few are the source from which exudes the virus that poisons every vein of authority in your domain. Its dispensers dictate the personel of your governing bodies. It runs your conventions and makes hypocrites of the adherents of your political creeds. It empoverishes the millions to enhance the emoluments of the few. It enslaves your producers and crowns their exploiters. It breeds poverty, destitution, insanity and crime. It is the forces of hell incorporated—and your babes inherit it.”

Twin evils: inheriting a crown or a lordship; inheriting a billion. Strange, is it not, that Americans look with disdain and apprehension upon the one, while tenaciously adhering to the other? What a consequence of conservatism, of custom, of early training, of inability to mentally grasp the real workings of economic conditions, to fathom the real determining force in human affairs. Millions there are of our citizens who would brave death rather than submit to the lesser evil; yet would shed their blood in defense of the greater. We are not far removed from the barbarian. How thankful a Socialist should be that he has been awakened from the mental sleep induced by such fallacies.

The Institution of Marriage and the Family

We now approach the third institution growing directly out of this method of livelihood as naturally as plants grow out of the earth. The right of ownership established, that of inheritance followed. That which belonged to me must pass to my son. Therefore, I must

know my son. Therefore, I must have absolute and exclusive possession of one or more women. Therefore, the all but insoluble monogamic or polygamic form of the sex relation—the institution of marriage and of the family as we now know it.

Attention should be called to the fact that this institution, the most sacred and reverential in human affairs, had its origin in a barbarian jungle; that its introduction became an absolute economic necessity if man and not woman was to be the principal in the property holdings. The line of descent had to be shifted from its former base, the woman. All forms of organization that had so long been based upon sex with woman as the pivot must now suffer a reconstruction that would make man supreme. And thus it was.

We must not, however, overlook the fact that while present economic conditions demand the abolition of the other institutions herein discussed, **because of the evil consequences of their modern development**, no such objection lies in the case of this one. There are mighty evils attendant upon the exercise of our marriage system—evils that have their root directly in economic (capitalistic) rottenness; but the monogamic sex relation and the family is one of the very few institutions of capitalism wherein revolution is not necessary to purification.

When marriage has been purged of its capitalistic elements—of its unions of expediency and diplomacy—of the legalized prostitution that serves but to cement fortunes—of the sexual unions that, at least on the part of the woman, are a home-acquiring necessity; when men and women are economically free and secure in the means for providing for home life and family sustenance; sexual union—marriage—monogamic marriage on the part of the

man as well as the woman—will result from the causes that should induce it. The elements of compulsion that so corrupt this institution in capitalism will be obviated. The powers of love, sympathy, congeniality and compatibility, and not those of economic pressure will rule this relation of men and women; and the institution will stand the test of a higher civilization upon its own intrinsic merits.

The Chattel Slave System

In the earlier methods of procuring a livelihood, in the gathering of nature's products, in fishing, hunting and the tending of herds, there was little of toil such as men would avoid or shirk; and there was much of daring and adventure that they would court. There was test of man's prowess, opportunity for display of physical force and mental acumen, to win the applause of one's peers and the approbation of superiors.

But in the new method of industry, in the planting, tending and garnering of crops, in long hours of toil in dust and heat, there was slight chance for display of manly qualities, small avenue for winning the smile of the lady or the salute of the knight.

In the old "industries" each played his part gladly, ambitiously and from choice. But when it came to the new, those ancestors of ours were so much like ourselves that they preferred to send a substitute.

In the selection of that substitute there is established an institution so potent in human affairs, around which so much of history revolves, that so deeply affects the individual lives of all the human hordes that have since come and gone, and that is still the great determining factor in the perpetuity of nations, that we approach its

consideration with a feeling akin to awe. It is the chattel slave system of the so-called ancient world.

Now the war-captive goes to till the soil—to dig a living out of the earth for himself and for the master. Previously he had been almost universally consigned to the caldron or the spit. The wickedness, the brutality, the immorality of such an appropriation of human life is now, in the new conditions, clearly revealed. But the revelation springs not from any augmented sense of justice, nor from qualms of conscience, nor was it handed down from any source super-human. True, their moral and ethical codes suffered revolutionary revision; but the revelator was, as usual, economic necessity. Harvest hands became more valuable than their weight in dressed meat; then the horror of the roasting disposition became apparent.

Some Side Remarks

The very contemplation of that horror shocks us. We have evolved to such a moral status—we are so thoroughly civilized—that the thought of deliberately killing a fellow human being—a brother—is revolting. Our finer sensibilities would not tolerate such a procedure.

No, we do not deliberately kill and eat our neighbors—knock them in the head and thus in an instant end their sufferings. We would not do that because we are civilized. But we as deliberately take their children, their babes, by tens of thousands, consign them body and soul to our industrial infernos; deprive them of every pleasure that contributes to child life; divorce them from toy, game, brook, field and flower; rob them of every advantage to learning and of all that contributes to the proper building of manhood, womanhood and citizenship; grind out their lives—yes, by tens of thousands—and send them to untimely

and forgotten graves, that industry may flourish, that the few may revel in the luxury of dividends. No, we do not kill them with a club, roast them on a spit and devour them as a sweet morsel; but we coin their very blood and muscle into dirty dollars and gorge upon them leisurely to the tune of fifty dollars a plate at society's banquet table.

And our sensitive, civilized natures are unmoved by such a spectacle; benumbed, deadened to practices that by comparison put to shame any indulged by our barbarian ancestors; blinded by the economic advantages of this "civilized and refined" system of cannibalism.

The fact that such practices are most unprofitable in the long run when considered from a national standpoint may form a theme for a moralist or an economist; but consideration of such "folly" is foreign to the business world. Business success is augmented by the practice. It pays. Business demands it; and in the din of that demand the cry of the moralist is unheard or unheeded. Or worse—no cry is uttered. Economic determinism, the power of deprivation of the means of daily bread, vested in those who profit from this hideous thing, seals the lips of the would-be acclaimer against it. The merited condemnation remains unspoken.

But 'twill not ever be thus. The manhood and womanhood of the world will not much longer brook such barbarities. When fully aroused, they will end them—end them by such means as may be necessary to end them, unswerved by consideration of the nature or cost of the application of those means.

To the Subject Again

Now let us return to the consideration of the matter in hand—the institution of chattel slavery.

This was the first industrial system instituted by man. No former mode of procuring a livelihood could be properly denominated a system. And more, it was a system that met man's requirements for as many thousands of years as any other has endured centuries. Kingdoms came and went, but this mode of industry remained. On the bent shoulders of the chattel rested every ancient monarchy; on his exploited labor for unknown ages, billions of humanity subsisted.

The relative importance of this method of industry makes it worthy of more extended consideration. We cannot more profitably spend time than in noting its most prominent characteristics.

To conceive of it at its best, we must divide a people into two economic groups—the slave and the non-slave.

The function of the slave was to produce the food, clothing and shelter of the world. But he did not own the product when produced. That belonged to the other division who owned both the man and his means of life.

The slave class lived upon condition only that it supply the requisites for the sustenance of the non-slave—upon condition that it submit to the exploitation of its labor. It was the exploited class and the non-slave its exploiters.

But a necessity devolved upon the exploiters that merits especial emphasis. The labor product was all their possession. They owned it as does the farmer the garnered harvest. But as the farmer must dole out from the crib a part of the yield to the animals essentials to its filling, so a part of what the slaves produced must be returned to them. What part? The answer to this question reveals the most significant fact, the most significant characteristic of this system of industry and, incidentally, of every other system yet established by man.

In order to perpetuate the race of slaves, it is evident, for instance, that to each man there must average to be returned such part of his labor product as would provide food, clothing and shelter for himself and a mate and enable them to rear to maturity at least two children. This is the minimum that must be theirs. This is what is commonly called subsistence. More scientifically it is stated thus: The exploiters must return to the exploited sufficient of the labor product of the latter to enable them to reproduce their kind. The rest of that product, **be it much or little**, cannot accrue to its producers.

Note further that there is nothing in this system of industry that, even for its most efficient working, requires that more than this subsistence shall be the workers' portion. And certain it is the exploiters will see to it that the exploited do not enjoy the non-essential.

A Change of System

But there came a time in human affairs when the chattel method of exploiting labor had to be replaced by some other. To hold such hordes of humanity in chattel subjection required a strong central government; and with the decay of the Roman Empire this requisite was dissipated. Industrial methods had to be adjusted to meet the new conditions. Gradually through the centuries as that Empire dissolved, the second system assumed permanency. The industrial descendant of the chattel became a serf.

In this connection we must observe that the change was made solely to meet the economic requirements of the exploiting—the owning and consequently the ruling—class. In it the exploited had no voice. Their interests were not consulted.

There is much of interest and of information in the study of this feudal system of production and of the modifications and adjustments of various institutions to conform with it. But that is not the matter in hand. Its details varied in different localities, but its consequence, so far as the producing mass of humanity was concerned, was a constant.

Here the serf might till some land for himself and some for his lord. There he might work a portion of the week for himself and the remainder for his master. It mattered not. Always his class were but an appendage to the soil and its transfer of tenure carried with it allegiance to the new manorial chief. Whatever the details of the method of exploitation, when the perquisites of priest and prince, of lord and lady, of duke and dude, of earl and emperor had been extracted, there was left to this producing class just what had accrued to their chattel ancestors—subsistence—sufficient to reproduce another mass like themselves.

And like the chattel system, there was nothing in this method of industry that required that the producing class should enjoy a greater degree of its product than subsistence made imperative; and there was the same ravenous horde of exploiters empowered to absorb all else. The form, the manner, the name of the system had changed; the effect remained unaltered.

Another Change

By the time we have reached the 16th century, mighty things are transpiring in the civilized world. America has been discovered and the explorer and adventurer is abroad in the earth. The earth has been circumnavigated and demonstrated to be round to the great discomfort of

the mythologists. A new route to India is found through the hitherto dragon-guarded seas around South Africa, stimulating manufacture, trade and commerce as nothing else ever had. The invention of the printing press opened the gates to the Eden of knowledge that the common man might enter and eat even the forbidden fruits thereof. The discovery of gunpowder and its application to firearms proclaimed the supremacy of the armed yeoman and the passing of the mailed knight. The more powerful and ambitious feudatories are absorbing the minor and weaker holdings and the Powers of modern Europe are assuming permanent form. Trade and commerce are opening to the commoner relatively mighty avenues for wealth accumulation and the power of riches is being pitted against that of hereditary title for supremacy in the world's affairs. Labor-saving devices—modern machinery in embryo—are appearing. And out of it all, the factory system is assuming significant proportions in the industrial domain. The demand for skilled labor is rapidly increasing. New and more fruitful means and methods for exploiting labor—new modes for getting a living and for the amassing of property—new methods of industry—are developing; and the feudal system is becoming obsolete. It is failing to meet the economic requirements and is doomed to oblivion along with institutions that characterized it, just as was its chattel progenitor a thousand years earlier. The wage system is absorbing the world.

The master class with an eye single to its economic interests has released its title to the corporal substance of the worker; and prompted by the same stimulant, is now, in a similar mock generosity, liberating the serf from his soil-attachment. The laborer is told he is a free man;

free to seek a means of livelihood wherever it may be found. But a rude awakening awaits him.

True, centuries will pass before the morn of that awakening will dawn; but that is of minor moment. Its coming is sure. The causes that will usher it in are at work; the effect must develop. His freedom is but nominal. Whatever apparent concessions the master may have made, the enslaving chain is unbroken. He bids the worker go at liberty, but extracts a title to the laborer's source of life.

In each of the former systems of exploitation, the prevailing mode of making returns for labor was to dole out to the worker a part of the real product of his toil—such part as the reproduction of his kind made imperative. On this the third system is a patentable improvement. It is better for the same reason that a railway train is better than a stage coach, or a trust is better than a horde of petty, disorganized, inefficient concerns cutting each other's throats at competition—it is more expeditious. Instead of awarding directly a part of the worker's product as formerly, the exploiter now retains it all and passes to the laborer a medium of exchange—some money—with permission to purchase through an intermediary, a merchant, the supply for his needs. But how much money? The answer to that question reveals one great fact, the consciousness of which is contributing mightily to the aforesaid awakening. It cannot be answered in dollars and cents—there is no sense in such an answer. The laborer now discerns that he can buy but part of what his labor produces; and, on an average, as in the former instances, that part is such quantity as is necessary to qualify him to furnish food, clothing and shelter for himself

and mate and to enable them to rear to maturity at least two children—to reproduce his kind.

And he is learning more. This system, far from freeing him, has but turned his labor-power into a commodity to be bought and sold in the world's marts—to be exchanged for other commodities as are the embodiments generally of his toil.

And more. There is nothing in the capitalist system that demands or requires for its most efficient operation that more than this shall be the laborer's portion. No matter what other conditions might obtain, competition among the sellers of his commodity, labor-power, removes all necessity on the part of the exploiter to more liberally reward him. Subsistence must be his; whatever else he produces, **be it much or little**, can no more come into his possession than can a celestial constellation.

And more. He learns that he is getting more for his toil than did an old slave or serf, not as a consequence of any intensified goodness of heart on the part of his exploiter, but solely because he is a more expensive article than were his lineal industrial ancestors. It costs more to produce a modern wage-worker than of old a chattel slave.

And more. He has reached a conclusion that, 'twould seem, should have been self-apparent through all the ages of the past, as it now is—the general deduction—that in any system of industry, no matter what its method of detail workings, wherein one class is empowered to exploit the labor of another class, there cannot accrue to the exploited more than sufficient to reproduce that class; on an average, subsistence, a mere living.

And finally, he finds that the modern wage system, far from being an epitome of liberty, is but the old systems in a new guise, developed in keeping with modern

requirements, in short, "the most refined system of slavery known to the race."

Parenthetically Remarkd

Once more let us digress for a brief word. In theory, as stated, to each man must go such part of labor's product as will, on an average, enable him to marry, and rear at least two children whose average education, physical development and manual skill shall qualify them to meet every condition that our civilization imposes upon man. This is the minimum requirement of the exploited no matter what the method. This is the theory of an exploiting system, and, in normal conditions, what must be carried out in practice.

Do the practices of capitalism in the United States today meet this theoretical demand upon it? Does capitalism average to qualify its workers for the fulfillment of this theoretical minimum of function? It does not. And the evidence that it does not is found in the millions of men who today refrain from marriage. Ask them why they do not marry and they will give you two reasons: First—The wage paid is insufficient to qualify one to meet the conditions and obligations that naturally and legitimately follow that state of man. Second—The tenure of employment and permanency of location in the gigantic industries of this nation, in present conditions, is each so insecure as to make hazardous a matrimonial venture. They will tell you: "No marry in mine, if you please. When comes loss of job, or distant transfer, or lockout, or strike or any necessity 'to hit the road'—well, 'a man may thrive and roam, but women are skeery critters when they haven't any home.' "

Wherein lies the possibility of protracting such a con-

dition through any considerable period of time? The successful operation of capitalism requires a standing army of unemployed workers. This army is just as essential to capitalism as is the other army that it has employed in its mediums for exploitation—just as necessary as is competition among sellers of labor-power. When, however, the unemployed host is augmented beyond industrial requirements, its total reproduction ceases to be a necessity. That is a condition that has been rapidly developing for more than a generation—a consequence of the fact that the new industries that are born of the labor-saving inventions do not absorb laborers so rapidly as the use of the machinery displaces them.

And let us extend our parenthesis to suggest that every one of those unmarried men—every man that capitalism disqualifies for the marriage relation—means a woman who cannot possibly marry—means a man and a woman living an unnatural life and all the immorality consequent upon such existences—**means a home destroyed. And capitalism is thus destroying them by the million.** Yet we find in our land many men for whose ignorance there is now no legitimate excuse who will stand up on their hind legs and tell our citizens that Socialism, whose chief aim is to qualify the masses for home owning and home enjoying, will destroy the nation's homes. "The human race has always believed everything except the truth."

Back to Earth

So much for the characteristics of this exploiting system. It is, however, with a consideration of its development, of the proportions to which the thing has grown, and the consequences of that growth, that we are most vitally concerned. Whatever it may have been in the past

is of relatively little moment. In our disposition of the problems that spring directly from its application in present conditions, lies the determination of the course of civilization. The nature and character of the future institutions of man are dependent upon that disposition.

This system, in its earliest form, came into the world as a consequence of economic necessity—with the development of a new mode of procuring a livelihood—during the most thoroughly revolutionary epoch thus far in man's career. It will go out in revolution of far deeper significance than that that ushered it in.

As already intimated, it is the application of this institution, this labor-exploiting system, in its capitalist garb and in modern conditions that makes imperative a revolution in our industrial methods. For thousands of years, in one form or another, labor has been exploited of all save subsistence; and, through it all, our civilization has grown to its present status and its tremendous potentialities. Now, within a half century, such forces for evil have developed, directly as a consequence of this formula of human relations, of this privilege bestowed upon one economic class, that civilization's continuance is dependent upon its overthrow.

All this is effect. The cause lies in two economic conditions that are too apparent to escape any save those who will not see:

First—As already stated, in any industrial system wherein one class is empowered to exploit the labor of another class, the exploited class (the producers) can enjoy but that part of its labor product that is necessary for the reproduction of that class. This rule is universal. It expresses a fundamental principle in the conferring of the exploiting privilege. The artificial, limited and local (and

often only apparent) variations from the rule that may be and are produced through the agency of labor unions are of minor import when compared to its sweeping application and serve but to emphasize the great truth the rule expresses.

Second—The increased productivity of labor functioning through the medium of modern machinery.

As a consequence of these two conditions, the degree of possible and actual exploitation of the laboring class is out of all keeping with that under any other form of the exploiting privilege at any other period of man's history. And the first and most conspicuous result of this augmented degree of exploitation is the amassing of our nation's wealth as the heritage of a few of our citizens.

In these amassed billions lurk the deadly foes of human organization, human rights and human freedom. Our industrial, political and civic problems of whatever nature are but the legitimate progeny of this concentration of power. Whether it be the corrupting of those to whom governmental authority is delegated—legislative, executive or judicial; the formation of trusts; the degeneracy of our masses in palaces or in slums; the enslavement of our manhood, womanhood or childhood; the bloody strife and its attendant suffering that characterizes the operation of our industries; the intermittent closing of the avenues of subsistence for the producing millions of the nation; or the marshaling of our hosts for slaughter on land or sea—a series of conditions that no nation can long tolerate and live—each and all are but the fruitage of the privilege of modern labor exploitation backed by the power of concentrated billions of wealth.

Already representatives of a small group, a mere dozen or so of our citizens, have admitted under oath before the

Pujo congressional committee that through their own vast holdings and through the domination of directorates of the great national industries and banking concerns, they control a volume of wealth amounting to some thirty-five billions of dollars' worth or about one-third of the assessed valuation of the United States. The annual investment of the tremendous returns from this wealth is an absolute business necessity. Annually they must add to their present owned or controlled holdings literally by the billion. And more. These holdings constitute the best paying properties—the best labor-exploiting mediums—in the nation. Often they constitute one or more monopolies that stand between the producer (such as the farmer) and his market, the consumer; dictate the prices that the one shall receive and the other shall pay; and through that vantage, reap even a richer harvest from what is held as the property of another than would be theirs if they actually owned the property and were thus forced to supervise it.

Herein we confront a condition and not a theory. Here is an accumulation of power in the hands of a few such as the world never before witnessed—such as never before was possible. In a few years, if industrial methods remain unchanged, those billions must be doubled and then trebled. These few must absorb the profit-yielding nation and that spells absolute slavery for humanity's masses.

By Way of Illustration

If one could ask the citizens of this Republic personally: Are such conditions as those just described desirable or tolerable? They would with one voice and regardless of political affiliation answer: "No; they are wholly undesirable and intolerable. The entire history of man's past and all present indications teach us that out of such

conditions spring the forces that will inevitably and rapidly destroy the people that perpetuates them." Woodrow Wilson has well said: "When has any people ever made a fight for liberty that was not a fight against the accumulation of regulative power in the hands of a few persons." Where in all the realms o'er which man has held sway can be found another such regulative, liberty-destroying power as has accumulated during the last quarter of a century in the hands of the financial kings of the United States?

Of course, occasionally one meets a fool who will hold that if the capitalists are "smart enough to get the billions, they should have them." But he is a rare specimen who votes the party name that he inherited and is as ignorant of the relation of cause and effect in human affairs as is an animal. Don't waste any energy on him. Nothing could be accomplished in such a case without getting an idea into his head and that is impossible; there is not room. But every man and woman in any degree qualified for citizenship will at once admit the imperative necessity of abolishing such powers for evil.

Now ask each one of these citizens: "Is it right for one man to hire another or a dozen others and make, say, fifty cents per day from the labor of each of them?" A vast majority will answer: "Yes, certainly it is. That is what he hires them for. If he does not see such a prospect, he will not hire them at all." Thus they admit that it is the lot of those who toil to be exploited if they are allowed to live. And then they ask: "Do Socialists hold that a person should not have such right?" And the Socialist answers: "We are not discussing that simple matter as an isolated question. What has been suggested has gone on for thousands of years, but it did not make

Socialism a necessity. It was going on in George Washington's day and for fifty years thereafter, but it did not even suggest Socialism. If that were all there were to exploitation of labor, Socialism would yet be as unheard of as formerly. But that is not all there is to it. A principle is here involved. If what has been suggested is right, then it is right for one to employ a hundred and clear an equal sum from the labor of each?" They will answer, "Yes, if he has the means. He thus gives them a chance to make a living." "Then should he have the same right to employ on the same terms a thousand or ten thousand?" Our political enemies might waver a little, but consistency compels the answer, "Why, yes, he should have the privilege." "Then can we bestow the privilege of thus employing a million?" Our adversaries compute and gasp. They see half a million dollars daily going into the possessions of the one. They behold an accumulation of wealth that but a moment ago they declared to be intolerable. Modern conditions begin to have a meaning never before so apparent. This is but the application of a principle hoary with age and whose effect has not until now been seriously questioned. But behold its present workings. This is not as of old. And finally, as a consequence of their capitalistic thralldom, they lisp, "We must regulate."

Even so brief and superficial a view of present day industrial doings has forced our friends into the ranks of the "regulators;" because they do not know where else to go. They begin to take measure of the condition that confronts them. And is that condition possible? Is it actually upon us? Yes, and a condition that makes our hypothetical one look very commonplace.

While it is true that the vast industries of this nation

are not yet in the hands of any one man, it is also true that about a billion dollars' worth of them are. They are practically all under the ownership or control of a very few persons and these banded together in corporate form and acting as a unit. One or two instances will suffice as evidence of their exploiting power, will illustrate the matter in hand.

The railways of our nation employ, in round numbers, 1,670,000 persons. Their owners clear, above every form of expense from the labor of each \$525 per annum. Not fifty cents per day from one million employes, but almost three times that daily and for 365 days in the year, from nearly two millions. The power for exploitation of labor, then, of this one industry is about five times that in the assumed instance and even that sufficed to scare our friends into "regulators." And yet this is but a fraction of the exploiting power of this group of our citizens—but one of many industries in their control.

The steel trust (absolutely in the same hands) clears from the labor of each one of its tens of thousands of employes \$780 per annum, or more than \$2 per day, Sundays included—more than four times our assumed gain. No wonder Mr. Carnegie can so liberally dispense libraries and Mr. Rockefeller donate to universities; but the quality of benevolence, and the evidence of "a wise stewardship of wealth" in these dispensations evaporates rapidly under the rays of research into the sources and methods of their accumulation.

The Remedy

Here then we are face to face with the problem of the ages—the concentration of wealth-ownership. Upon its solution depends the future of the race. There is no

"philosophy of social progress" worthy of the name that does not incorporate that solution in its entirety. The Socialist meets the issue without equivocation.

The source of that concentration is too apparent to admit of serious disputation and has already been fully shown. It is the direct and immediate consequence of the absorption, by the exploiters, of the products of labor multiplied in efficiency by the vast machinery of today.

This exploitation is a thing inseparable from private ownership of the sources of a people's subsistence. Private ownership without profit, without the appropriation of labor's product, is an impossibility. When profit, the result of exploitation, is barred, a "property" is confiscated.

It therefore follows that since it is the use of our means of subsistence for the purpose of labor exploitation that must cease, the privilege, the institution, of the private ownership of these things must be abolished.

The Alternatives.

The Socialists hold, and we know rightly, that collective ownership of these exploiting mediums is the only channel through which our civilization can be preserved.

Then is Socialism inevitable?

It is not.

"Pessimism," you cry. Well, let us hope that that is solely pessimism and that the "It is not" is untrue.

Private ownership and the vast machinery now in operation must in some way be divorced. **That IS inevitable.** Yet one can but wish that the manner of that divorcement were more apparent.

It must not be overlooked that the solution of the ma-

chine problem depends upon the ability of our masses, and not upon that of a few of us, to solve it. That means that it depends upon the ability of the Socialists to educate those masses into right lines of thinking and to direct them into right lines of action. **For nothing is now more apparent to the thoughtful student of matters as they are today than that, historically speaking, within a very brief period the people of this nation will collectively own that machinery or they will smash it.**

The evils consequent upon present conditions in industry are now so apparent that it is practically a loss of time and energy to enumerate them; but the proper solution for our mighty problem is by no means so common knowledge. To make it so is the task before us—**and we must hurry if that task is ever completed.** Necessity for the application of drastic and even revolutionary measures is apparent even to many of the chief beneficiaries of present industrial methods and occasionally one of them voices his opinion thereon. Recently at a banquet in Los Angeles, California, in the presence of some five hundred people and one of the wealthiest audiences that ever assembled in that city, the great bull mooser and ex-partner of J. P. Morgan, George W. Perkins of New York, while discussing the matter of amassed billions in the hands of a few, suggested a way out of the difficulty. But may the Powers deliver us from it. He said:

“In the last twenty-five years evolution has made more tremendous strides in this country than ever before in the world’s history. This evolution has had at least two great branches—invention and education. We have been quick to recognize and master the new conditions created

by the inventor. We have been slow to recognize and master the new conditions created by the educator.

"We have been so busy, so deeply interested with the output of the factories of the inventor that we have had no time to give to the consideration of the output of the factories of the educator, and it is this last output that is today disturbing the business world.

"I have gone down deep and given you the two underlying causes—invention and education.

"The only way to actually and permanently dissolve the trusts and prohibit their reassembling in some other form is to prohibit the cause of their existence, which cause lies in the myriad of inventions having as their sole object the annihilation of time and space, which means just one thing—namely, consolidation and centralization."

What a remedy! Prohibit the invention and use of machinery! Smash the machine, because through its use we are handing over the nation to a few of our citizens and are thus establishing and maintaining conditions that will destroy civilization.

Has it never occurred to Mr. Perkins that present problems arise not from the use of machinery but from the folly of permitting a few of his kind to own it? The increment resulting from the use of the "inventor's factories" must ever accrue to those who own those things. While the owners are Perkins & Co., it must go to them. Why not own them collectively and let mankind become the beneficiaries?

Mr. Perkins would doubtless reply that we are not far enough removed from the barbarian to thus conduct our industrial institutions. Possibly so, but it is certainly evident that our civilization and machinery are so thoroughly wedded that they can never be divorced

without destroying both. Whatever befall, his remedy spells disaster.

No, let us have more and greater machinery. Turn the inventor loose. Let him "annihilate time and space" and drudgery as well. But let us own and use his product as it should be owned and used for the benefit of the race and not simply for the amassing of billions in the hands of Wall Street's chosen.

This is the lesson that we must get to humanity—and we must hurry. For, let us repeat, it is as certain as fate that within a brief period the people of this nation will own that machinery or they will smash it.

But not in the manner proposed by Mr. Perkins.

This smashing, literal smashing, is the alternative and the only alternative to the Socialist solution.

Whether the one or the other disposition of machinery is to be the outcome depends upon the efficiency or inefficiency of our efforts as propagandists. And we must hurry.

There are millions of people in this country who suffer under stress of present prevailing conditions and there are other millions who witness this suffering who are sufficiently intelligent to fathom the fact of their own insecurity.

These millions are convinced that "something must be done;" that there is a cause for their privations wholly exterior to themselves. They are "getting ugly" and, when sufficiently aroused, **are going to strike at what they conceive to be that cause and in the manner best suited to gain their purpose.** The danger, therefore, results from any wrong conception that may be entertained as to that cause and, consequently, as to the necessary remedy.

As to cause and remedy, two conceptions so widely different as to be practically antipodal are prevalent.

The first is held by by far the greater fraction of our citizenship and it embodies an imminent menace to civilization.

These are they who attribute their privations, so often their practical enslavement, to the greedy machinations of individuals or corporations. They regard these as personally responsible for humanity's suffering. The thought that these embodiments of greed and power are the legitimate progeny of the present system of industry is foreign to them. Nor outside the teachings of Socialism can they glean this great truth.

When the hour arrives for them to strike at what they conceive to be the source of their wrongs, they cannot act up to a higher standard than they know; they cannot do better than the best that is in them. If to them responsibility lies with the individual, it is the individual that they must strike. In other words, they are not going to proceed to reconstruct an industrial system; they are going after necks.

With this mass of unenlightenment we must labor. And more. In doing so, we must combat the influence of the capitalist press and periodicals—the most tremendous power with which any people ever contended. Look upon the thing. One may peruse miles of editorials—republican, democratic or progressive—or volumes of the diatribes of the magazine muck-raker, and find much that is condemnatory of this individual or that, or of this or that corporation; but never a suggestion that the evil is a natural consequence of industrial conditions. On the contrary, their chiefest function is to conceal or smother this saving truth. Its admission would land the author

entirely outside the pale of any capitalist party. It is certainly patent to the student of affairs today that the labors of the periodicals whose mission it is to defend the present status are, through the false impression expressed or implied therein, **inviting disaster upon the heads of those whom they would protect.**

But to the other human mass, the Socialists, who suffer and know why they suffer, who are oppressed and know the source of power of the oppressor, who understand capitalism and recognize its legitimate fruitage, the appeals of the enemy are impotent. To this mass the hour to strike is here and no opportunity ever passes unused. The overthrow of this industrial system is their mission. They know that the oppressors, stripped of their power to prey upon the laboring masses—a power vested solely in the private ownership of the sources of human subsistence—would be as harmless as doves. They comprehend the folly of the taking of lives or the destroying of property—lives that this system would replace in an hour as it replaces a king or a Morgan and property that their exploited labor must needs replace.

These aim at capitalism, not at capitalists; at the system of property holding, not at property. Their weapons are the ballot and the strike—the one wielded through a political party, the other through the union of the workers. Their purpose is revolution in industrial methods, not the aimless tragedy of the mob.

Are they to succeed? Yes, if they can bring sufficient of their fellows to a knowledge of things as they are. Otherwise, devastation must take its course.

We must hurry.

In Conclusion

The revolution essential to the world's further progress is industrial. The present methods of distributing the products of industry must be changed in its entirety and be conditioned upon justice to all concerned.

This revolution completed, a new mode of gaining a livelihood is inaugurated. A new series of relations is established. A new standard of what we denominate as right and wrong is set up. A new version of moral and ethical code will issue. In short, our institutions will of necessity, as they ever have, suffer adjustment to industrial requirements. And, obedient to the law of economic determinism, civilization, shifted to a firmer base, will gain a new lease to life and move on to higher and greater accomplishments.





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